1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6

[p. 1 is blank]

102
103
133

[p. 2-A]

Fig. 1 Relief Map of Malta and Gozo.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6

102
103
133

Fig. 1

Relief Map of Malta and Gozo.

[p 2-B]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

*311
●102
634

Fig. 70 Main Cultivated Areas and Key to District Names: Gozo.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

24

102
133

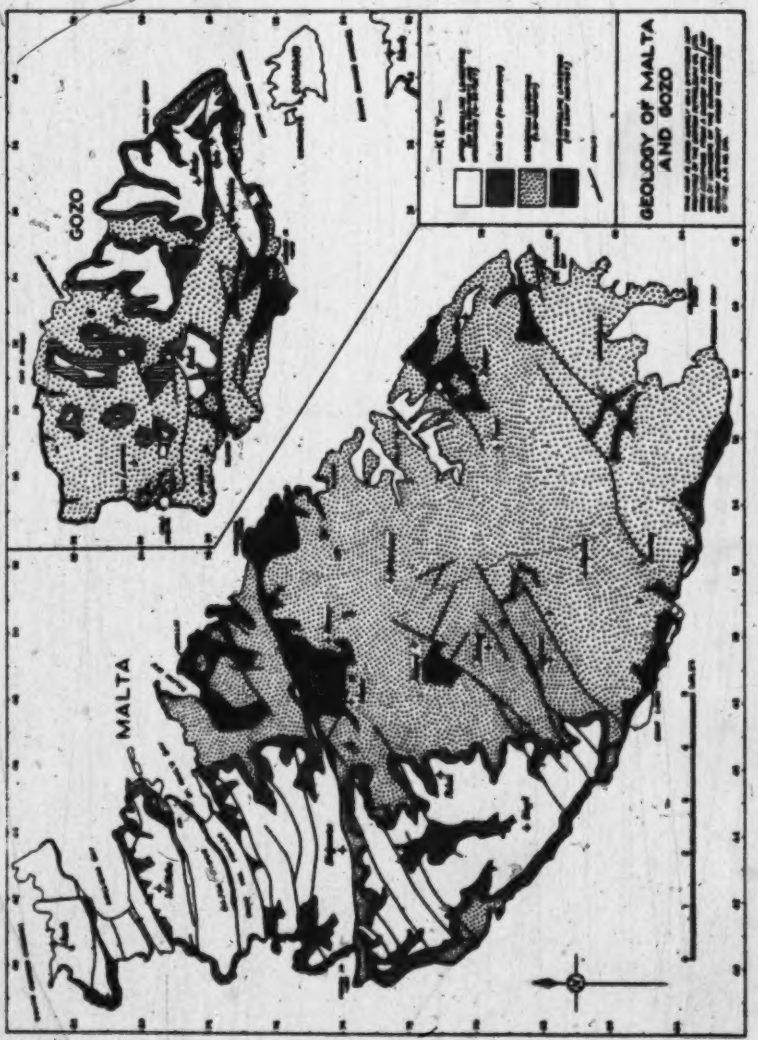
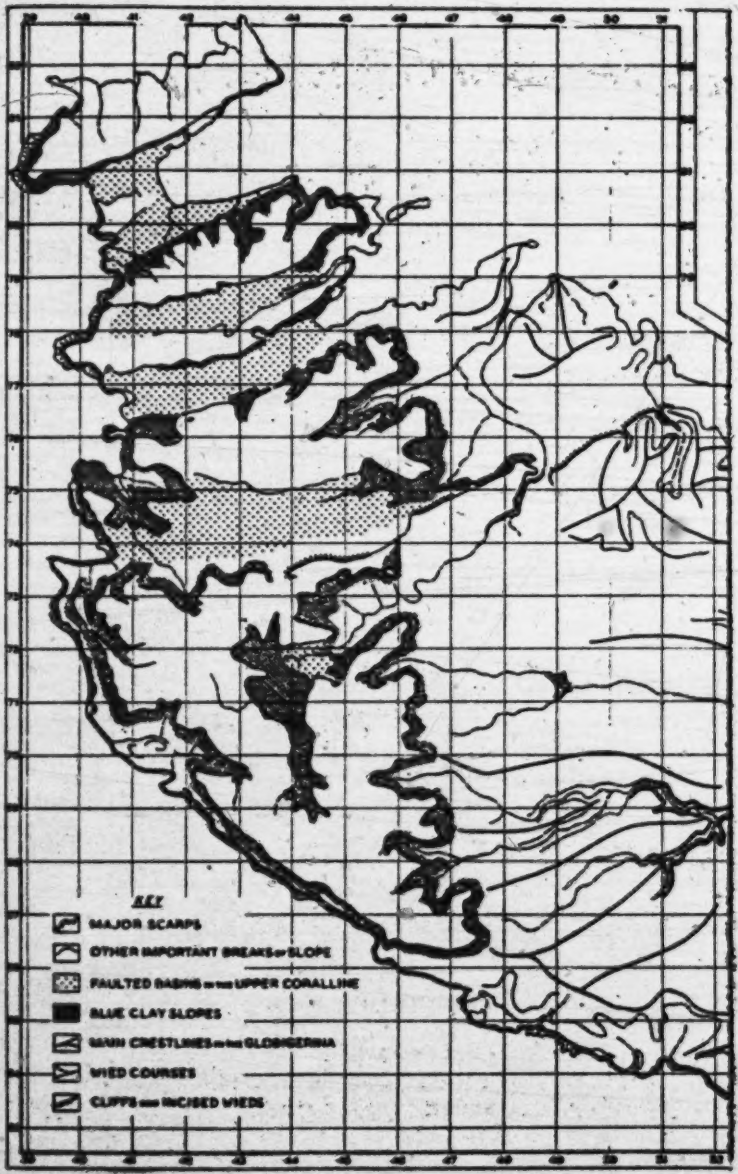


Fig. 1 Geology of Malta and Gozo.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6

102
133



[p. 35-A]

Fig. 3 Physiography of Malta

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

102
133

Fig. 3

Physiography of Malta.

[p. 35-B]

1:Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

102
133

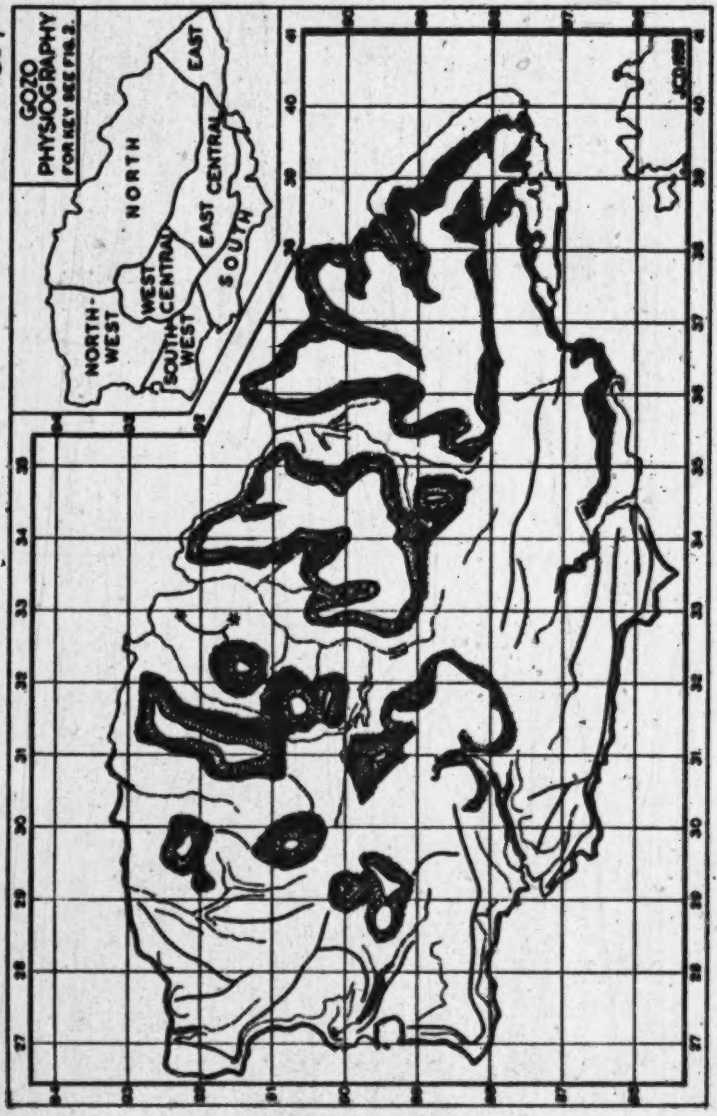


Fig. 4 Physiography of Gozo.

[p. 39-A]

*132
•101
654

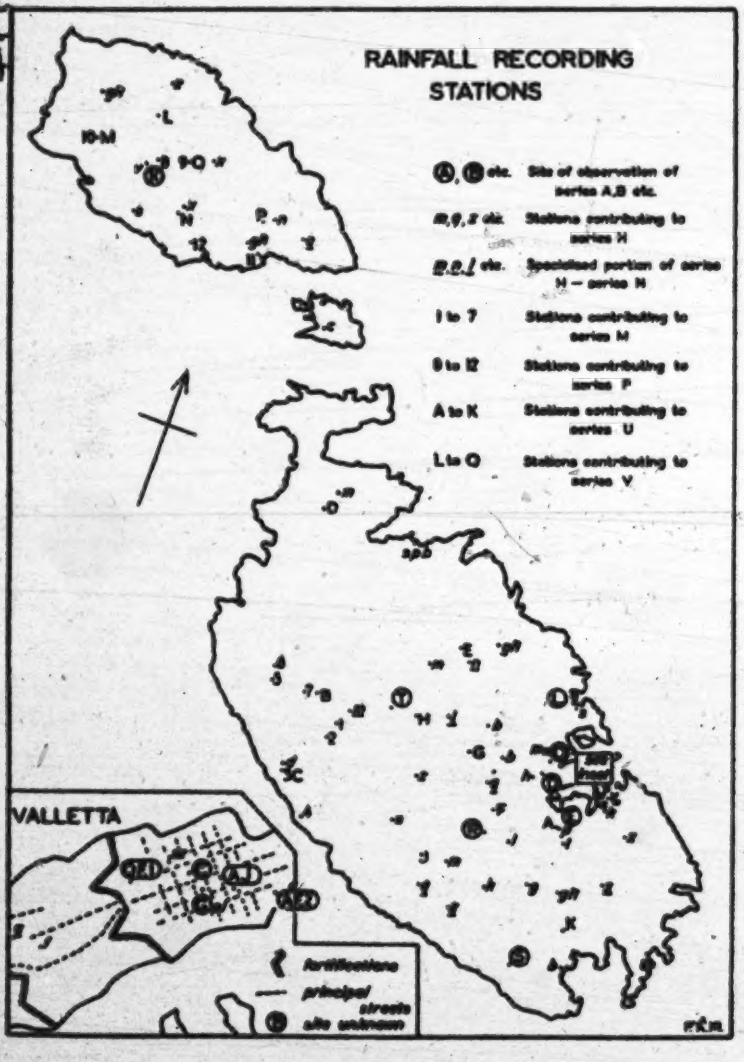


Fig. 9 Rainfall Recording Stations.

[p. 57-A]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

102
134

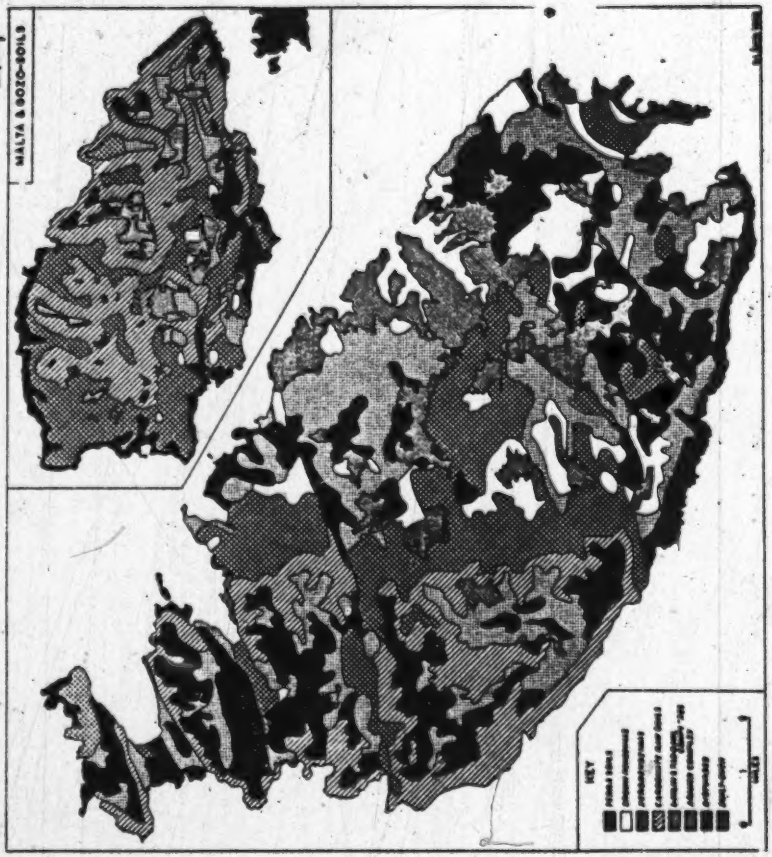
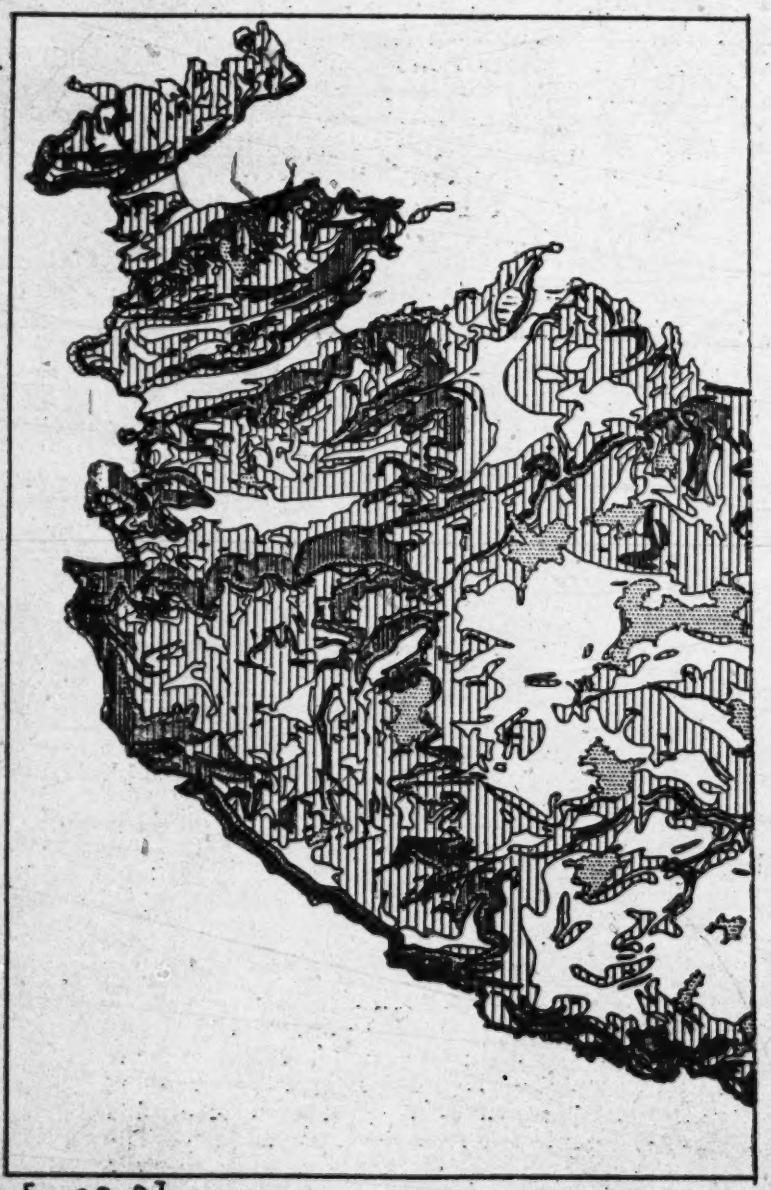


Fig. 37 Soils of Malta and Gozo.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malta

107
133
311



[p. 98-B]

Fig. 28 Steepness of Slope (Malta).

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malta

102
133
311

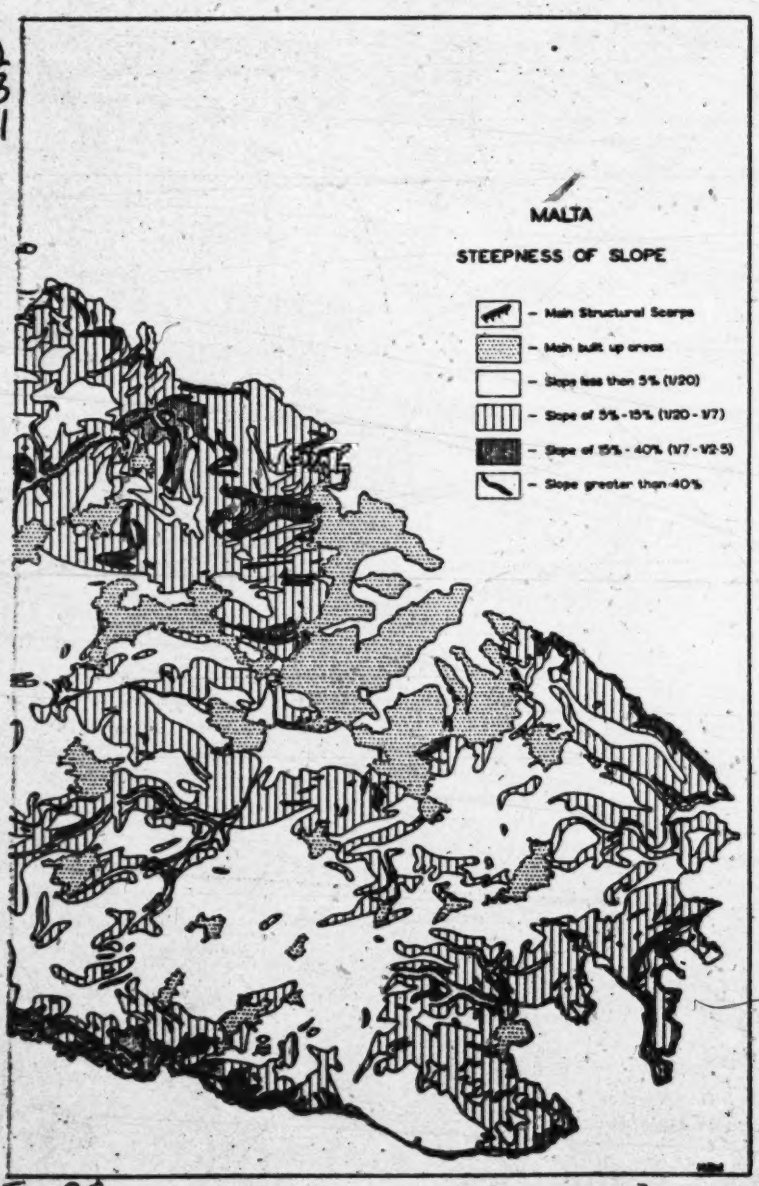


Fig. 28

Steepness of Slope (Malta).

[P. 98-C]

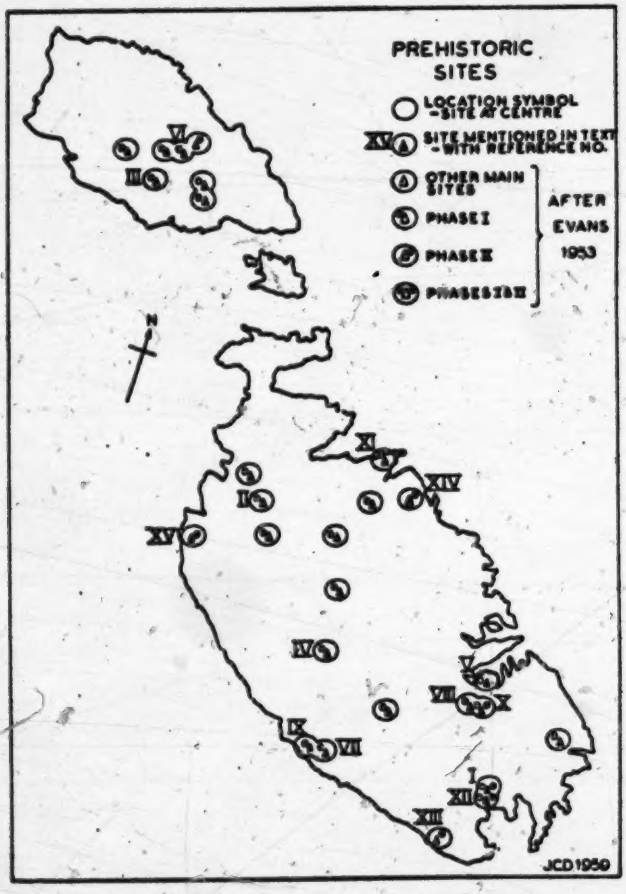


Fig. 20 Prehistoric Sites.

clover-leaf plan of shrine and forecourts, associated with 'cut-out' styled ware also with *Skorba* affiliations. By a little after 2000 B.C., a late Mgarr temple type had evolved contemporaneously with pottery of a more individual style as found in the Żebbuġ tombs (IV). In the latter, red ochre and flint have also been found, both imported from the Sicily-Lipari region. At Kordin (V) (Corradino), a more highly developed temple was built with embryonic apses opening off the centre court and in Ġgantija (VI), an early gigantic trefoil was further developed in this form (Plate VIII). At Ġgantija and Ħaġar Qim (VII) a penultimate stage foreshadowed the later climacteric. The buildings and individual stones became of immense size and, for the first time, the softer

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
MALTA

*175
●102
361

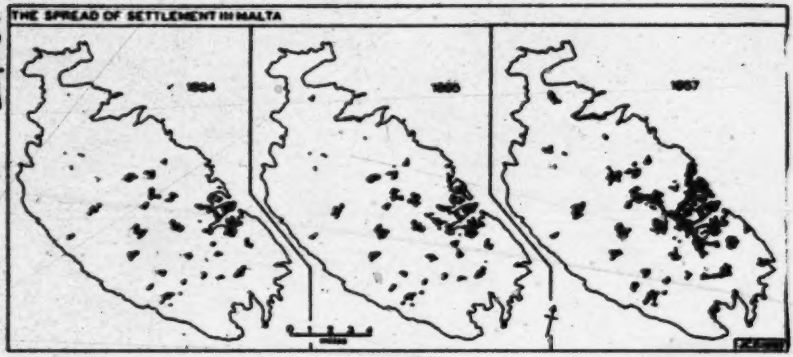


Fig. 32 The Spread of Settlement in Malta.

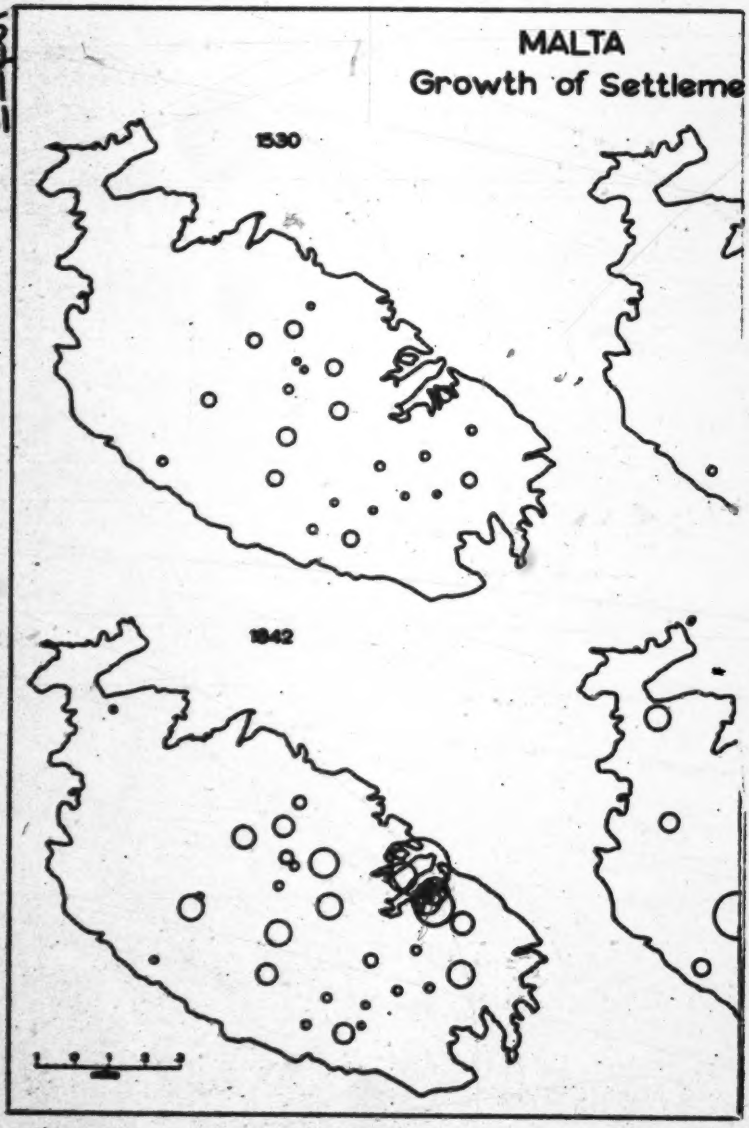
102
364

Fig. 33 Malta: Sewerage.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malta

*195
●102
161
361



[p 139-A]

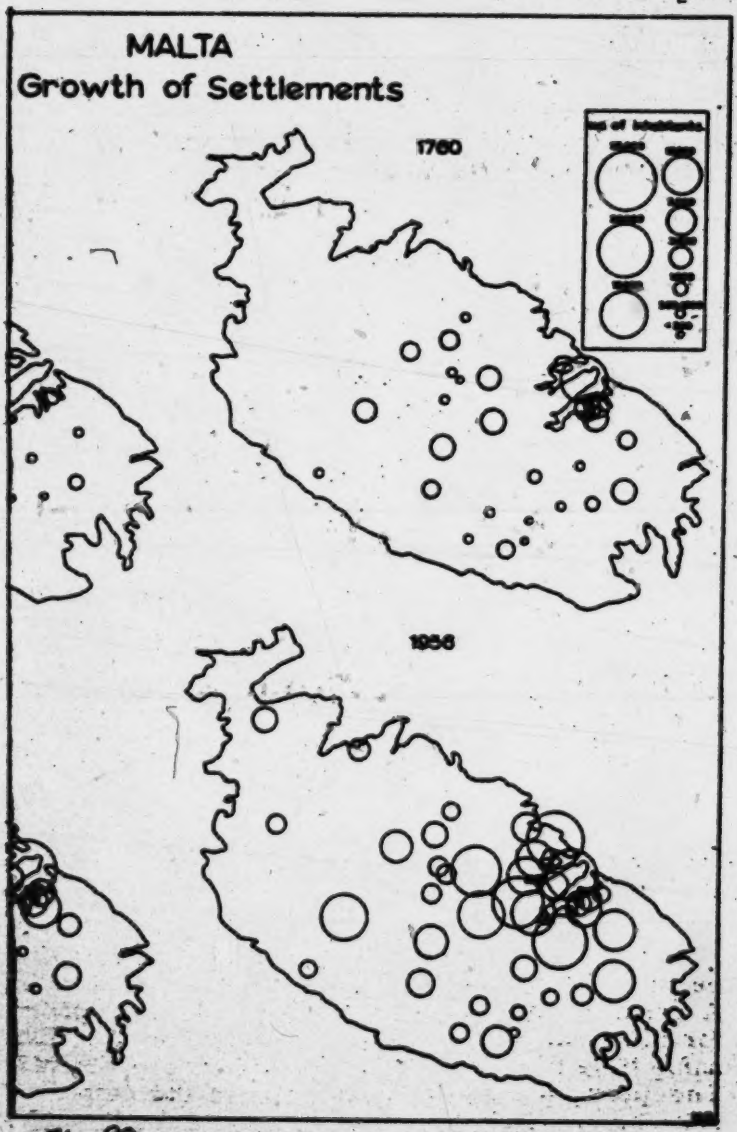
Fig. 30 Malta: Growth of Settlements

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6

Malta

[139-B]



175*
102●
161
361

Fig. 39
Malta: Growth of Settlements.

[p. 139-B]

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Gozo

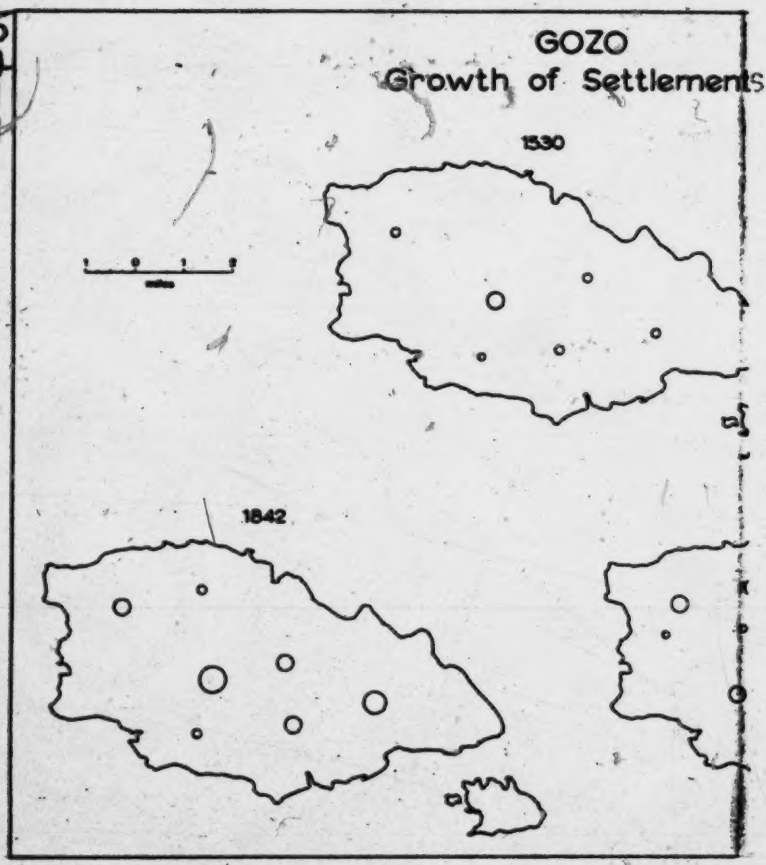
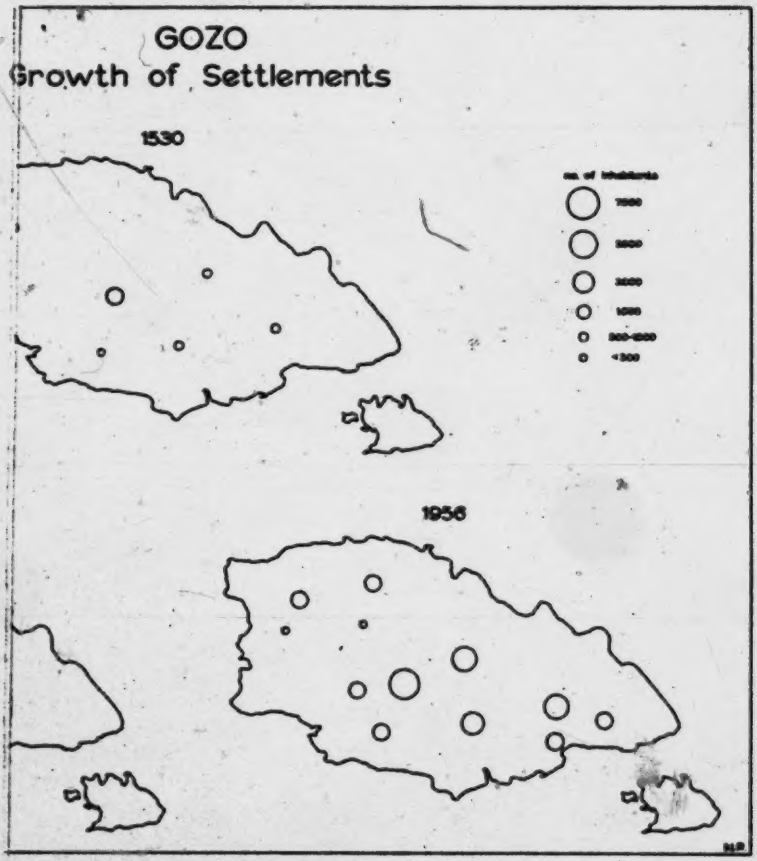


Fig. 40 Gozo: Growth of Settlements

[p.140-A]

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Gozo



175*
161
102
361

Fig. 40 Gozo: Growth of Settlements.

[p. 140-B]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

102
161

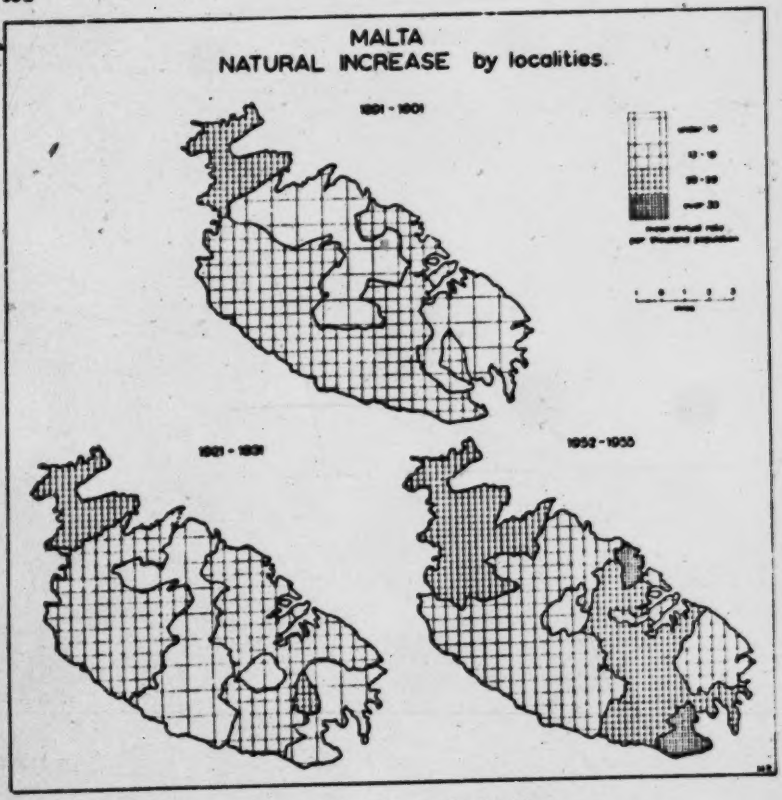


Fig. 55 · Natural increase by locality.

163

BIRTHS

The crude birth rate in the Islands has remained between 30 and 40 per thousand over almost the entire period since 1826. Only in the 1840's did it exceed 40 and since then it has remained well below that figure. In 1917 and again in the Second World War it fell below 30, but a permanent downward trend has only been established during the last decade, bringing the birth rate below 30 since 1952 (Fig. 54).

The overall trend has thus been one of decline. This began after the peak of the 1840's and continued until the 70's. There was a reversion to higher rates during the last two decades of the nineteenth century which was carried on until 1906, but the next four years brought unemployment and depression, foreshadowing the trough of the 1914-18 War. This was followed by a recovery to 38 per thousand, but the rate soon fell again to remain around 33 until the Second World War. A marked decline in the period 1940-43 was followed by a rise in 1944 to levels above anything experienced since the 1850's and these were maintained until 1948. Since then, decline has been rapid and sustained. With the sole

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

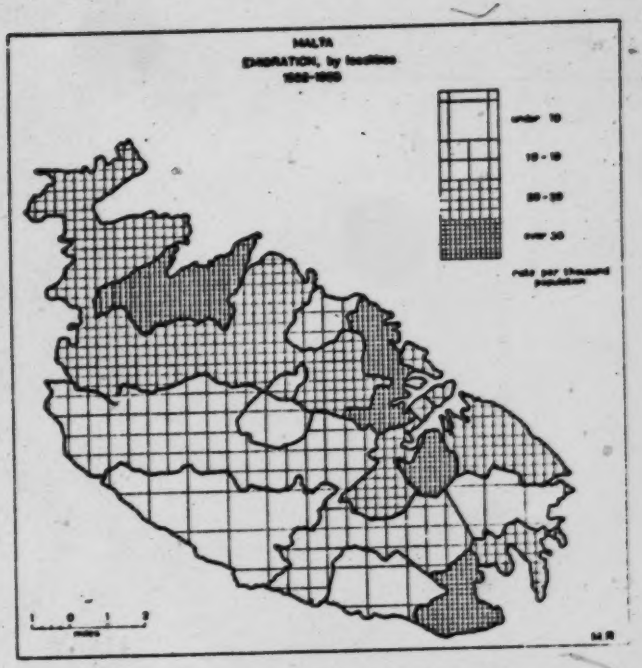


Fig. 63 Emigration by Localities, 1952-55.

puzzled note made by the Royal Commissioners of 1911 would seem to be applicable to the whole of our period: 'We cannot but conclude that the Maltese people as a whole are by no means a destitute population seeing that they continue to absorb and pay for imports of considerable value over and above those which may be said to be paid for by the exportation of the products of the Islands' (30).

The obvious question of whether this process has now reached its limit is bound up with our analysis of the contemporary situation. For a decade or so, there has been a substantial overspill of population in emigration and the birth rate has declined (p. 153). The present apparent equilibrium is however most unstable. The rate of emigration itself is only to a limited extent controlled by economic forces and is bound to fluctuate. If the 1948-56 rate of natural increase were maintained and emigration discontinued, the total population of the Islands would leap up another 100,000 over the 1947 level to 400,000 by 1968. Moreover and as noted on p. 157 the nuptial fertility rates reveal that the rate of natural increase could rise even higher than at present if the indirect effects of emigration disappeared. To what circumstances can the concept of a population optimum be referred? Quite obviously the term has no relevance either to the known past or hypothetical future in that historical experience has so conditioned Maltese attitudes the even now there seems general confidence that a continued population inflation can be maintained.

Demographically considered these are facts of observation; socially and economically they are the factual basis on which future policies must be based.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

●102
464
504

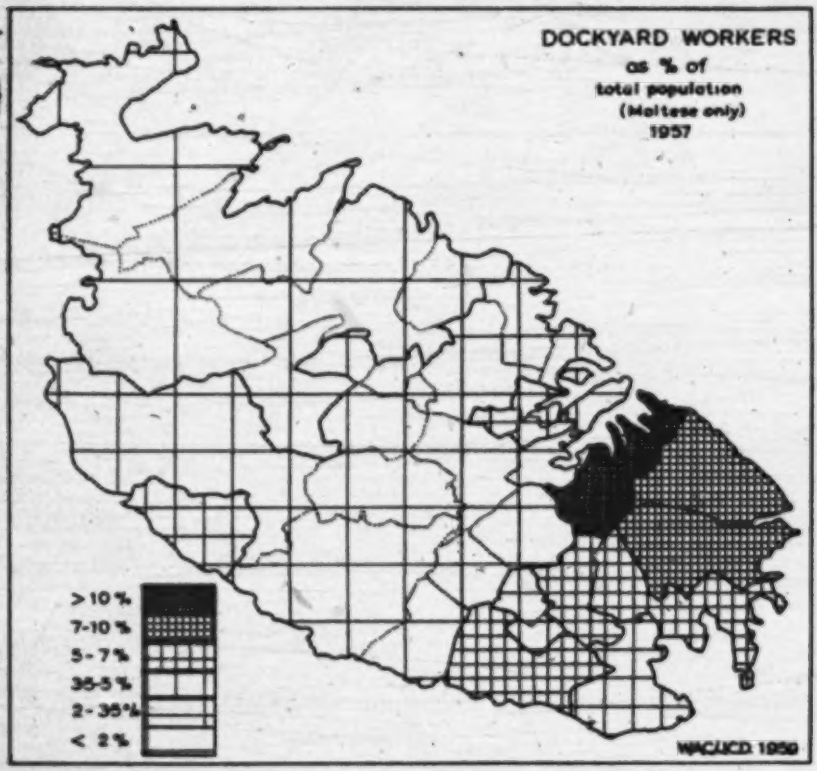


Fig. 64 Dockyard Workers as % age of Total Population.

[p. 172-A]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

102 464 504 [361] Fig. 84 shows the distribution in Malta of Maltese Dockyard workers by residence as a proportion of the total regional populations. The zones of concentration are centred on the Three Cities, and the great importance of Dockyard employment in the North-East as a whole, a phenomenon more than a century old (19), is clear. Particularly noteworthy in this context is the much smaller association of Dockyard employment with the belt of urban settlement which stretches from Valletta westwards to Lija. Conversely, the northern third of the Island, most recently settled and still relatively sparsely populated, has very little indeed to do with Grand Harbour. Gozo, still more remote, had but 25 Dockyard workers. Some 417 English workers were employed in the Dockyard most of them living in the suburban residential areas west of Valletta, 75 per cent. in contiguous Sliema, St. Julians and Gżira.

Thus we see the one part of the climax of that change in Malta which, commencing in the sixteenth century, swung the economic centre of gravity from the Centre to the North-East. During the last century the new conurbation extended its grip on the rest of the Island. Police Traffic Records (20) show [894] part of this effect; on the 5th February, 1958, a normal day, 28 special buses, in addition to public transport, carried 930 Dockyard employees to work from a zone extending to Birżebbuġa, Żurrieq, Siġġiewi, Dingli, Rabat, Mosta and north-eastwards to St. Julians.

185 504 Here we have reason and space only for the briefest of notes on current economic conditions. For more complete statements the reader is referred to the recent publications of the Maltese Department of Trade and Industry. As a result of Britain's reappraisal of her strategic needs, the old Naval Dockyard was handed over to a civilian firm by April 1959. Some emotional reaction has

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

102
499

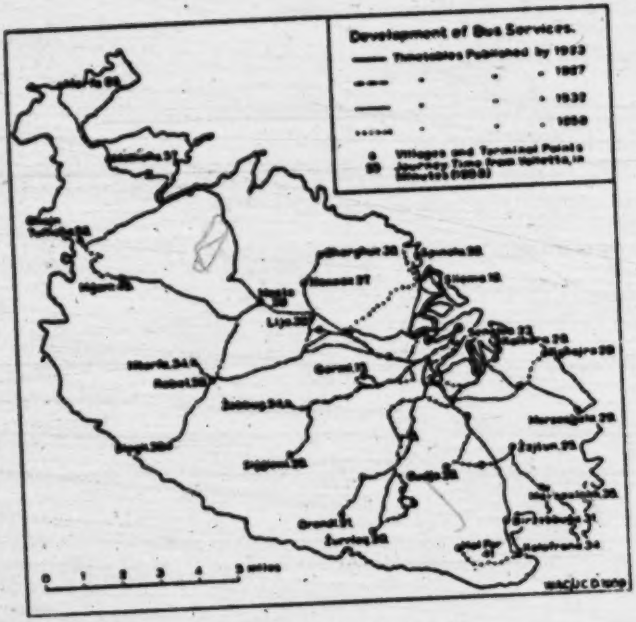


Fig. 65 Development of Bus Services.

494 existence field alignments, small bridges and 'permanent ways' soon absorbed into the weave of country lanes. With the coming of the car, lorry and bus there rapidly appeared differentials in the importance of the many roads. During the last 40 years, new motor roads have been built, such as that traversing Wied-tal-Pwales for military purposes, or the coast road between Salinas and St. Andrews for military and civil use, and recent alignment changes have been made to make more suitable for modern economic needs some old routes. In Gozo as in Malta this has led to the strengthening of importance of the capitals, and in the latter island to the appearance of true communication centres such as Mosta. At the same time the relative remoteness of those regions off the main highways has been increased.

The duality of the nature of these changes is well exemplified by the development of the public bus services (Fig. 65). In March 1959 there were 20,181 licensed vehicles of which over 13,000 were private cars and taxis, almost 4,000 lorries and vans and some 600 buses. These last play an essential part in Maltese life. In September 1923 (24), the first official recognition of the existence of buses plying for hire took the form of regulating tariffs by mileage. By September 1933 the boom in this new transport sector was such that further regulations had to be introduced. Operating permits were obligatory, certain minimum services required, and the order of departure of the competing buses regulated. At this time the recognised services only extended between Valletta and Sliema, making four stops in all, with a legal maximum of 80 buses a day. Later in 1933 this was extended to St. Julians, and until 1937 there is no mention of service extension outside this suburban zone, although by the latter date the number of buses per day had risen to over 120. In 1937, the first great extension

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

107
256

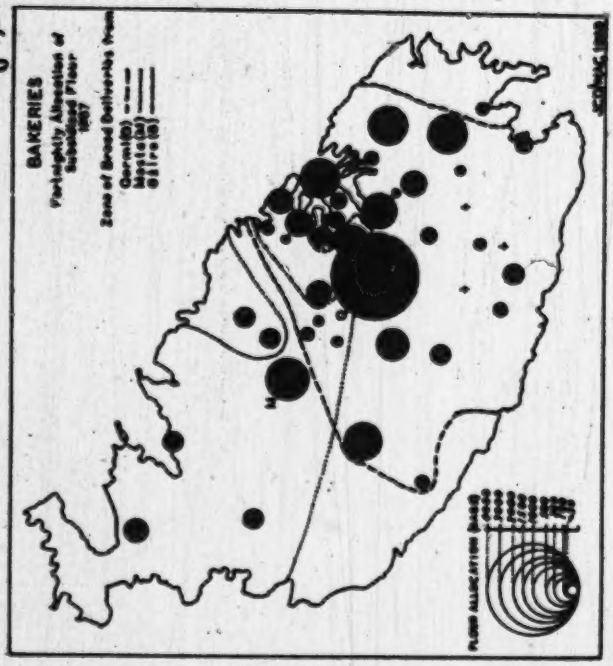


Fig. 67 Bakeries.

169

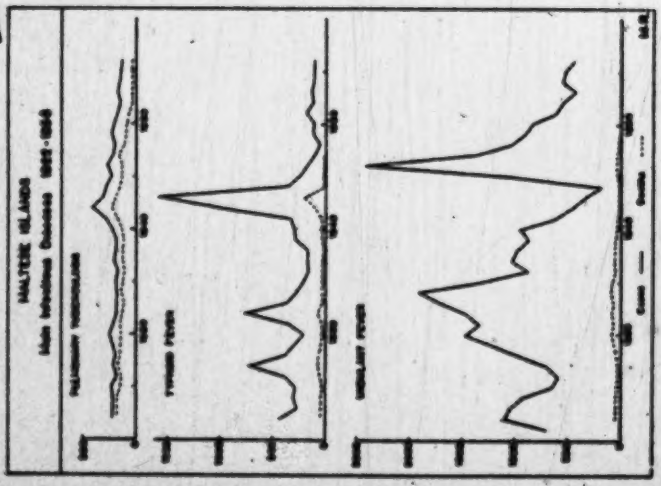


Fig. 68 Maltese Islands: Main Infectious Diseases.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

tion can read, travel and make contact directly and vicariously with the world outside. Emigration too has tested the strength of the Faith. In consequence, we can now find in Malta a historical cross-section represented in spatial distribution. At one extreme one can meet in Sliema agnostic Maltese who never go near a church; at the other, in rural Gozo, one can find general obedience to the Bishop's instructions. All societies are heterogeneous in this respect but in Malta the strain of division within society is particularly great because of the existence of so many other cleavages. The reaction of the Church to this new situation has been dual in character. In the first place the Church itself has taken official action. Reform and correction, the imposition of rigorous film and book censorship, the series of edicts on dress and on behaviour have accompanied research, such as that of Abbé Houtart (22), into the needs of the people. Secondly, there have appeared the lay organisations with the avowed intent of redressing the balance. M.U.S.E.U.M. and Catholic Action before World War II, Cana, Legion of Mary, Social Action, the Holy Name Society and many others of foreign and indigenous origin since 1945 have developed in the conurbation where the challenge to the Church was strongest (23).

Financially the Church is still strong, owning as it does some 19 per cent. of the agricultural land of the Islands and an unverifiable total of urban property (24). Politically, the strength of the Church rests on its hold over the minds and hearts of the people. It is not necessary for the Church to take much overt action to demonstrate its power.

As a last vignette of the changing Maltese socio-economic complex we may consider some aspects of recent research on a useful indicator of social change, the bread baking industry (25).

The purchasing, distribution and processing of wheat and wheat flour, remains as it has been for centuries, Government controlled. When the Knights established their capital at Valletta and when the suburb-outwork of Floriana was built, great stone-chamber granaries were hewn out of the solid rock, developed versions of the much older 'bell-pits'. These underground granaries were stocked by the official organisation, the *Università*, and the grain periodically distributed at controlled prices. This siege-system, necessitated by dependence on imports, was abolished in the early nineteenth century, and the newly established Board of Trade contented itself with licensing importations. As a measure of agricultural protection and for the raising of revenue, duties were levied on these shipments. During the twentieth century, and culminating in the emergency measures of the beleaguered Islands during World War II, controls became tighter and grain prices heavily subsidised.

During the period of urbanisation and more especially during the last siege the general practice of home baking rapidly declined in Malta, although in Gozo it still persists. In the latter island there was in 1957 only one full-time and one part-time commercial bakery, while in Malta there were 201. All food grains produced for sale in the Island should legally be sent to licensed flour mills for blending. Imports, almost entirely of hard Canadian grain, are made by the Department of Trade and by the Victualling Yard in H.M. Dockyard. Ninety-seven per cent. of all flour issued for ration-bread making is subsidised, but local estimates suggest that up to 50 per cent. is used for making other products, this illegally used flour being sold at a discount.

Fig. 87 shows the distribution of bakeries in Malta, their importance and the main distribution areas as they existed in 1957. Only two villages in 1950 and one in 1957 - Safi - did not possess their own bakeries. This however is not indicative of closed fields of distribution but only of the multiplicity and the small-scale of the enterprises. Of the 35 districts, 32 imported bread from and 17 exported bread to other areas. Over half the 15,000 bags of subsidised flour issued in 1950 eventually found their way as bread outside the receiving districts. Of this inter-regional trade, Qormi supplied almost 80 per cent. Very briefly the points of interest are as follows. Qormi, which in 1957 had 48 bakeries, has always been the traditional baking centre, partly because of its central situation, but mainly as noted in Chapter VIII because of its situation in

[See p. 198 --Analyst]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

a dry-farming cereal region. The other main centres are of more recent growth and reflect a variety of factors, Mosta as a regional centre, Gżira and Msida as suitably placed coastal sites within the conurbation. Secondly, the distribution of bakeries does not correspond directly with variations in population density but rather reflects those variations in an exaggerated form. If we omit Qormi from consideration, Fig. 67 indicates fairly accurately the strength or weakness of traditional society in inverse ratio to the strength of commercial bakery development. Thirdly, the inter-regional 'trade' in bread, together with evidence we have no space to consider such as the development of travelling shops, etc., shows the importance of the new mobility which is rapidly breaking down old parochialisms. Uniformity, homogeneity, openness to world ideas, these are the social virtues lauded in the twentieth century, which are being inculcated in Malta most effectively by the delivery vans of the new commercialism. The decline of local individualisms is aesthetically sad; it is also dangerous in that the smoother the appearance of the social emulsion the less heed is paid to the degree of real cohesion between its members.

REFERENCES

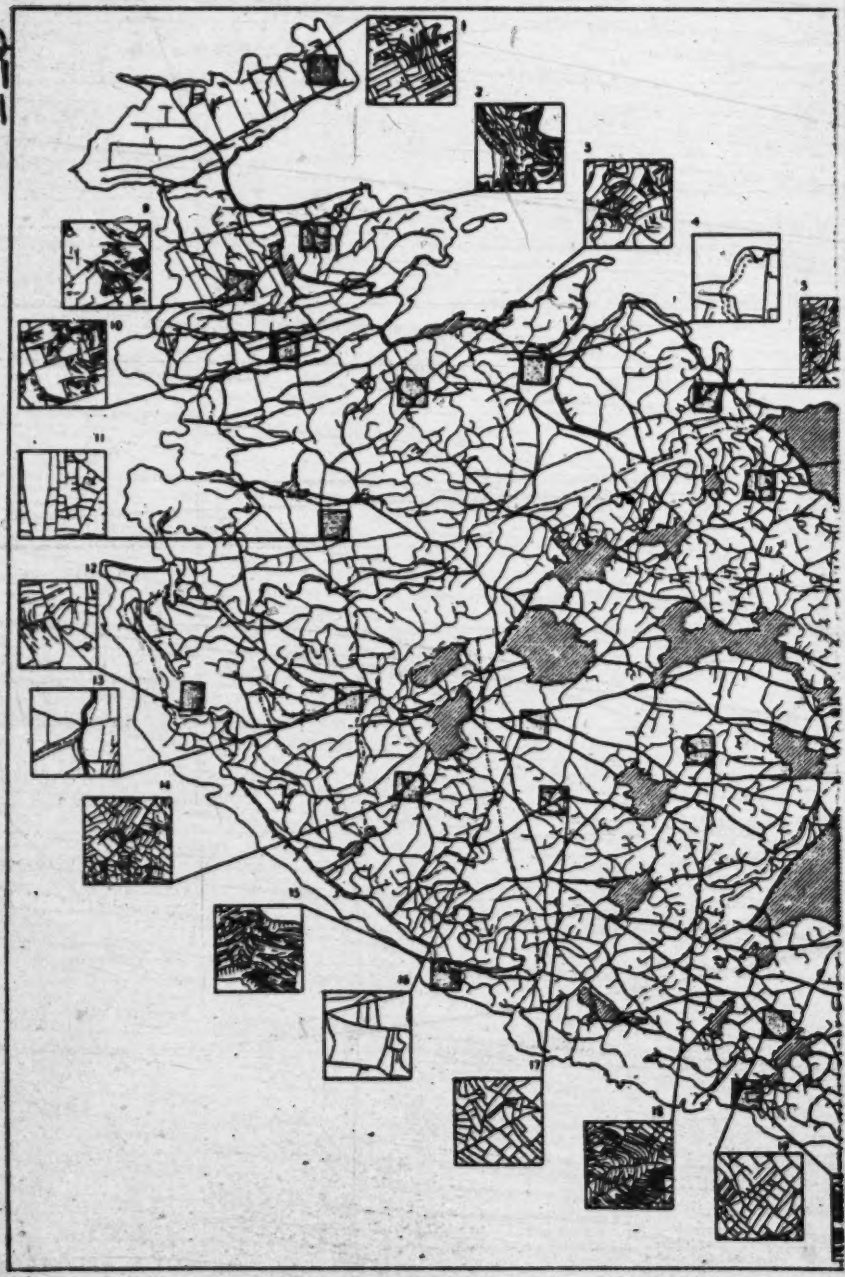
As noted in Chapter V B, a convenient and useful work of general reference is 'Britain in Malta' - Harrison Smith, *op. cit.*

1. Report of the Royal Commission of 1933.
2. Report of the Malta Round Table Conference 1955. H.M.S.O. 93 and 94.
3. Ibid.
4. For detailed reference consult Maltese newspapers, in particular '*Il-Berqa*' (Maltese), 'The Bulletin' and the 'Times of Malta' (English), and the great number of ephemeral pamphlets published in recent years.
5. see PRICE, C. A.: Malta and the Maltese. Melbourne. 1954. p. 153.
6. see '*Tajjeb li thaw laf*', No. 9/58. Malta. Depart. of Information and Tourist Services. February 1958.
7. the 'Ghaqda tal-Kittieba tal-Malti'.
8. see ELLIS, C.: A Plan for Postwar Education. Malta. 1943.
9. Annual Report on the Health of the Maltese Islands. p. 19. Malta. G.P.O. 1938.
10. see Survey of Child Welfare Problems. Malta S.C.F., 1956.
11. ibid.
12. CACHIA, Dr. E.: The Infant in the Home - Survey of Child Welfare ibid.
13. see CHARLTON, W. A.: Recent Trends in the Economic Geography of Malta. Ph. D. thesis University of Durham. 1960.
14. Milk Marketing Report, 1938-39 (Barnes Report), Malta. 1939.
15. POPE PIUS XII: Marriage and Moral Law. Encyclical Letter, 1951,
16. as reported in Times of Malta, 11.3.1938.
17. *Cana*, Nov.-Dec. 1957, p. 10 (Trans. B. W. Beeley). The organization *CANA* helps to prepare engaged couples for marriage and has a marriage advisory council. It was founded by Father Vella.
18. The Acts of the Apostles, Chapter 28. see also ALFRED, BRO.: Life in Malta in Roman Times, Malta Yearbook, 1937.
19. CAESAR PULLICINO, J.: Malta in 1575. Social Aspects of an Apostolic Visit. *Melita Historica*, Vol. II, No. 1.
20. QUENTIN HUGHES, J.: The Building of Malta, 1956. London.
21. MIEGE, M.: '*Histoire de Malte*. 1840 Paris (1841 Brussels).
22. HOUTART, ABBE.: The Socio-Religious Study of Malta and Goa. *Centre de Recherches Socio-Religieuses*, Report No. 64. Brussels. 1960.
23. Source material concerning these religious activities ranges from the *Annario della Diocesi di Malta* before 1938; and the Catholic Directory of the Maltese Islands 1938, the Archbishop's Palace; to C.T.S. Publications and reports of Lay Organisations.
24. see Chapter IX.
25. CHARLTON, W. A.: *op. cit.*

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malta

102
311
491



[p. 184-A]

Fig. 68 Communications and Field Patterns

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malta

107
311
491

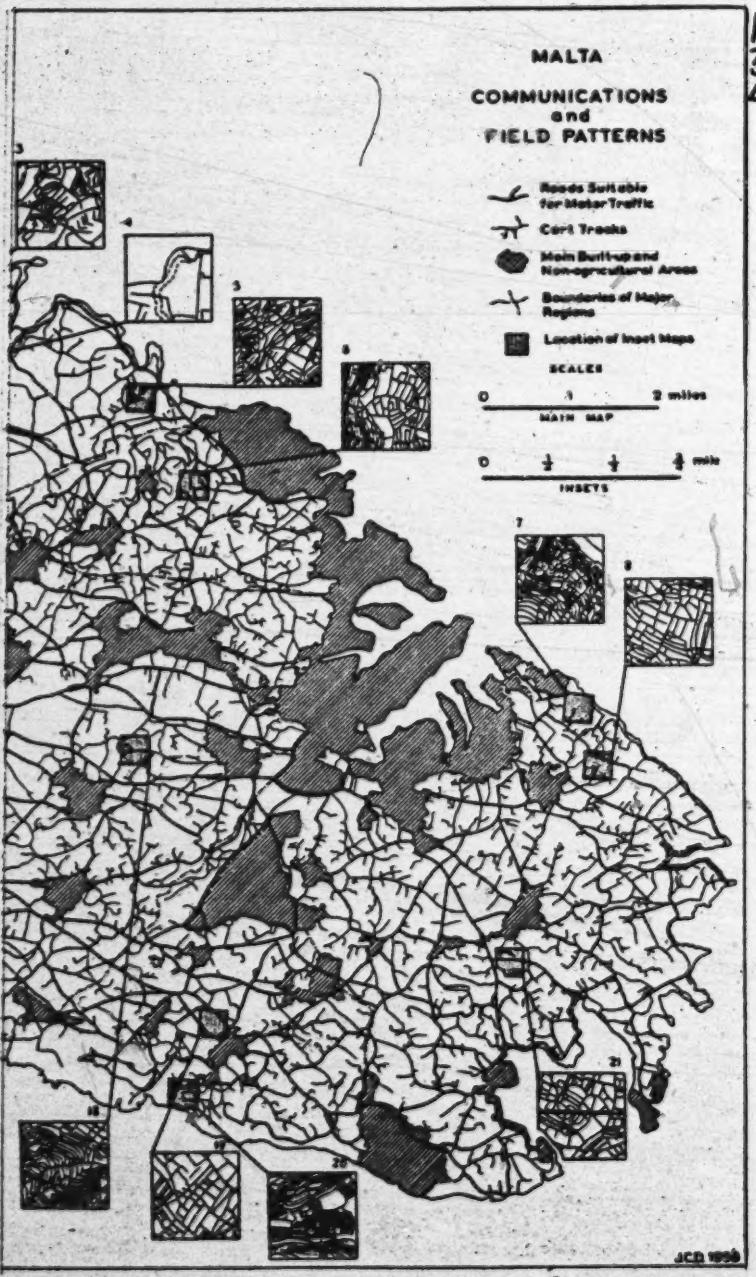


Fig. 6
Communications and Field Patterns.

[p. 184-B]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

D. Note on Fig. 68

COMMUNICATIONS AND FIELD PATTERNS

Roads, tracks, stone walls and buildings are the human imprint on the surface of the land and the first three of these elements are illustrated in Fig. 68. The pattern of communications, while at first appearing quite devoid of plan, nevertheless shows distinct regional characteristics. On the Coralline Uplands, where cultivated land is often scattered among stretches of karst, there are few motorable roads, but numerous tracks appear to wander at will across the surface. In the Marfa, Mellieha Ridge and Bajda Ridge districts, a grid-iron pattern of roads and tracks reflects mid-nineteenth century plans for the allocation of land.

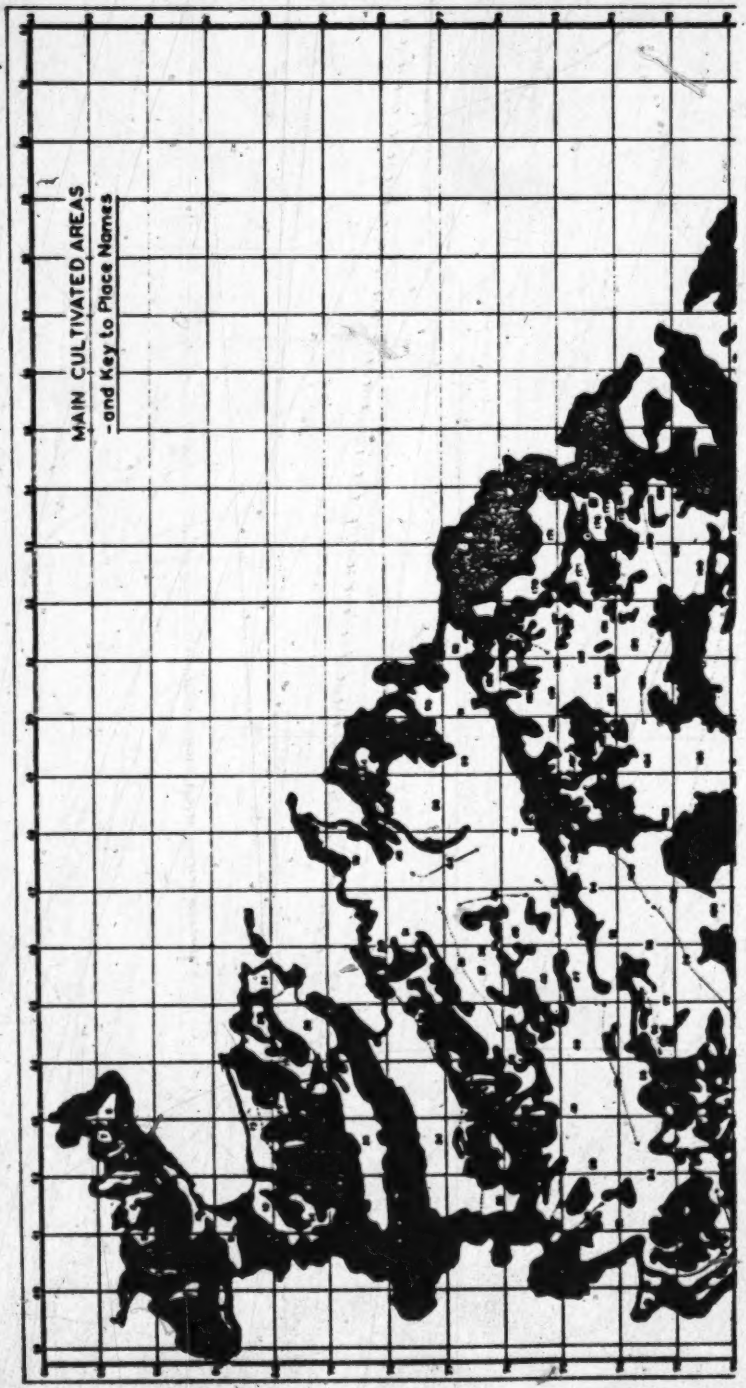
Basins and lowlands such as Mitieb, Bingemma, Wied tal-Pwales, the Blue Clay Basin and Wied il-Ghasel, are characterised by an open network which includes several important roads and a minimum of linking tracks, an arrangement also characteristic of the central plains west of Żebbuġ and Siġġiewi. In these areas, the gentle slopes obviate the necessity for cart access to every field, while the absence of terraces does away with the need for well-defined, walled tracks. 'Service tracks' leading off the main lines, are virtually absent. This is in complete contrast with the state of affairs prevailing throughout the bulk of central, southern and eastern Malta, where roads and connecting tracks form a denser web between the numerous settlements and their lands. Here, 'cul-de-sac' service tracks abound and few fields are more than a quarter of a mile from one of them. There is a marked tendency for the network to become closer in regions where steep slopes are common as in the Naxxar-Gharghur hills and around the Wied il-Kbir complex.

The inset maps, each covering an area of one-ninth square mile, illustrate the great variety of field size, shape and arrangement to be found in Malta.

1. Marfa. The rectilinear nineteenth-century pattern has been superimposed on older patterns which show a clear relationship to topography.
2. Mellieha Upland - Wied Ghajn Żejtuna. The narrow terraces of the sharply sloping valley sides contrast with the rather larger fields of the valley floor and with the open karst of the upland.
3. Wardija Uplands. An irregular pattern developed on the Coralline plateau summit.
4. Wied il-Ghasel. Unusually large, open fields with only occasional walls. The wied channel (shown by broken lines) has been ploughed over.
5. Ghallis Hills. Small, irregular enclosures on the hill tops; larger, more regular fields in the small valley seen in the south-east.
6. Naxxar-Gharghur Hills. Large fields on the smooth hill summits; extremely narrow terraces on the sharply incised valley sides.
7. Ricasoli-Zonkor Ridge. Minute enclosures, the smallest in Malta, on the seaward side of the ridge.
8. Larger more regular fields on the southerly, inland slopes of the same ridge.
9. Mellieha Ridge. Fragments of an old, topographically-determined pattern remain, on which a few lines of more recent origin have been superimposed.
10. Bajda Ridge. A clear example of the superimposition already referred to.
11. Bingemma Basin. Large fields, often with a strip formation, are typical of down-faulted Upper Coralline basins.
12. Santi-Bingemma Uplands. Now almost entirely abandoned: the fragmentary character of the pattern is typical of such areas.
13. Blue Clay Basin, near Fiddien Bridge. Large, open fields.
14. Rabat-Dingli Uplands. A more intensively worked section of the Upper Coralline along the Rabat-Dingli road (shown by a double line). Contrast with number 13.
15. Western Rdum Lands. Part of the Rdum tal-Lunzjata showing the minute subdivision typical of such areas.
16, 17, 18, illustrate variations within the central part of Malta. In example 16, the fields are particularly large. 17 shows greater subdivision, irregular in the north and approaching the rectilinear in the south. 18 illustrates the effects of steeper slopes, in this case on the southern side of the Wied is-Sewda.
19. A regular pattern on gentle slopes between Qrendi and Mqabba.
20. Minute terraces near the southern coast.
21. The effect of recent road building is illustrated here in the splitting up of no less than 14 fields, along a 600 yard stretch of road. In the process, a number of minute fields of little or no value have been formed.

[P. 186 is blank]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta
*311
107
103



[p.192-A]

Fig. 69 Main Cultivated Areas and

EZ6 Malta EZ6
Malta

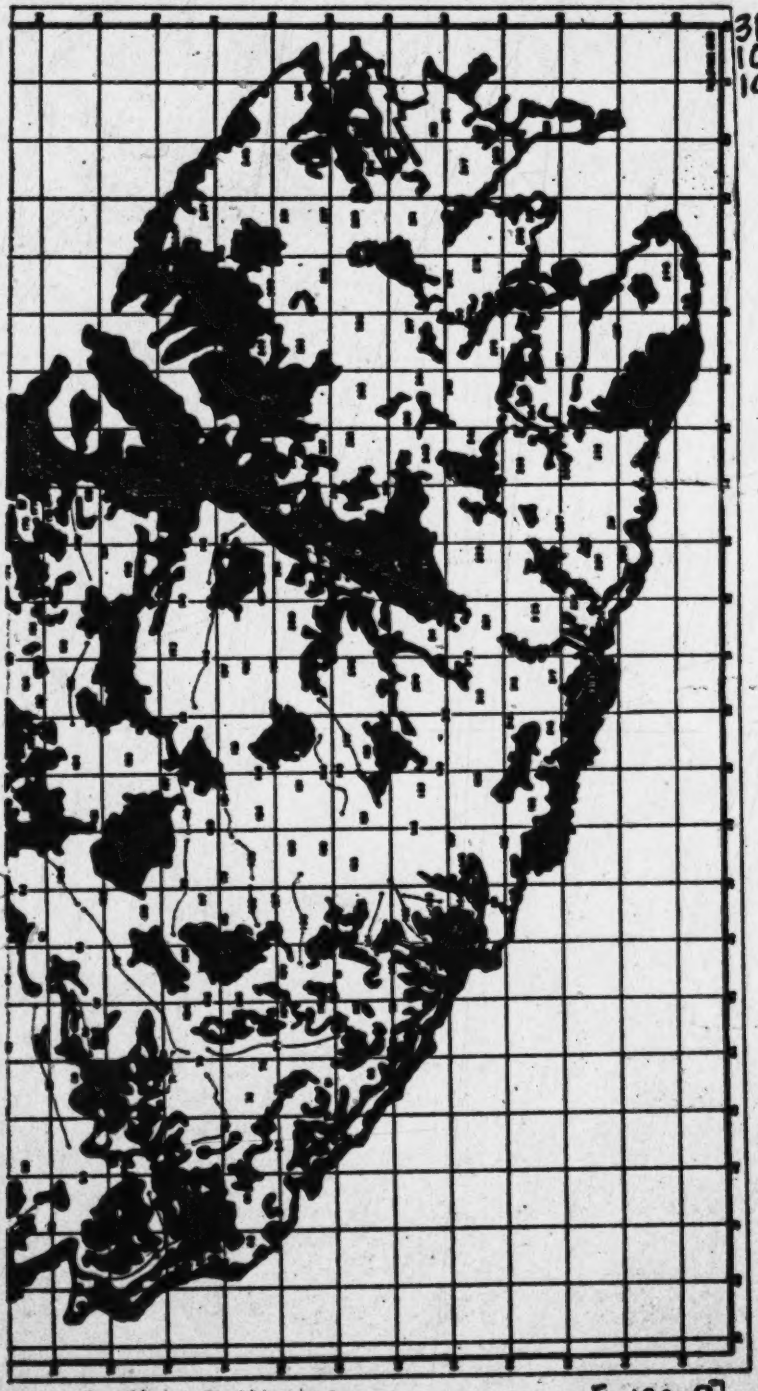


Fig. 69 Main Cultivated [p.192-B]
d Areas and Key to Place Names: Malta.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

Islands and could thus provide continuity in the interpretation of the records of the many field workers.

The survey parties worked in the Islands during the months of March and April in each of the three years 1955, 1956, and 1957. In March-April and August-September 1958 the authors themselves carried out final checks. During the Spring periods, the use of fairly large teams of observers, between six and eight in number, enabled the work to be concentrated at a critical time when the widest range of crops and of activities are to be seen. Summer vegetables and cotton are the only major crops not then in the fields and this difficulty was overcome by the enlistment of the other Durham research workers permanently residing in the Islands and by a summer visit of one of the authors. Objection might be raised to the spreading of the survey work over more than one season. The difficulty of completing such work on such a scale during one short period of time is not a sufficient answer. The real answer is that the time spread did not matter. The miniscule field pattern and the further subdivision into separate plots, both amply illustrated in the examples shown here, mean that crop changes from year to year merely result in the re-shuffling of tiny pieces of an intricate mosaic. The variety of crops grown and identified (see below), the relative uniformity of crop sequences and the individuality possessed by the various regions, further remove any deficiencies apparently implied by this particular method. The spreading of the fieldwork over a number of years did in fact allow both the checking of methodological validity and the carrying out of subsidiary pieces of work. For example, sample areas were surveyed during each of the four years, thus giving an accurate picture of crop sequence and rotations, as well as a check on short term change.

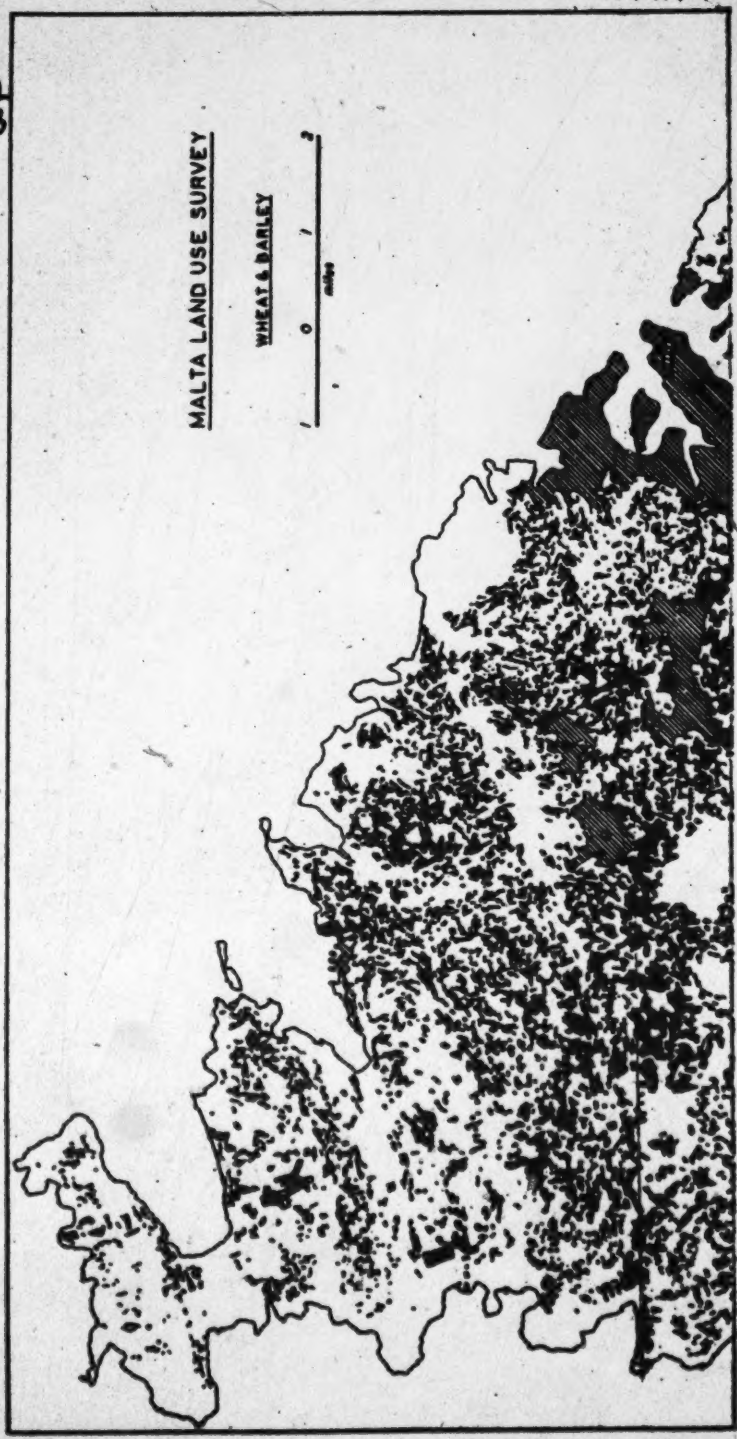
The following crops were individually identified in the field: sulla, wheat, barley, vines, fruit, olives, potatoes, onions, tomatoes, marrows, other vegetables, broad beans, peas and vetches. In addition, uncropped land was recorded as waste, fallow, rough grazing or tilled. In several cases, e.g. vegetables, fruit and vetches, a note was made of the actual variety of plant being grown, e.g. cauliflowers, artichokes, apples, peaches, lemons, *gilbiena*, *zozfa*, *widna*, etc. Coloured maps on a 6-inch scale, showing the 18 different crops and uses of land have been prepared. Cost of publication prevents their reproduction here, but they have been used in the preparation of this volume, particularly in Chapters VII B and VIII. The Land Use Maps (Figs. 69 to 98) show the distribution of individual crops, though the range distinguished has been somewhat curtailed. Wheat and barley, tomatoes and marrows, the various vegetables, broad beans and peas, and vetches and minor fodders have respectively been combined into single maps although the accompanying text notes regional variations. These 14 distribution maps in black and white have been prepared by reduction from the coloured 6-inch series. They were originally prepared on a 2-inch scale, and were thus directly comparable with the standard 2-inch topographical sheets and with the 2-inch geology and soil maps. The distribution maps, together with the coloured 6-inch are at present stored in the Durham Geography Department and it is hoped that the former at least will eventually be published on a 2-inch scale. The amount of cartographic work involved has been at least as great as that done in the field, and, since it was carried out by the authors alone it has consumed a considerable amount of time. However, it is felt that the labour has been justified in that only by accurate cartographic representation and by deduction from the maps can easy generalities be avoided. The long term character of the project also made easier the establishment of friendly contacts with local individuals, both official and private, whose help is sincerely acknowledged, and at the same time allowed the authors to amass a background knowledge of the Maltese Islands which has been invaluable in their interpretation of the agricultural landscape.

Note. A preliminary report - 'Agriculture in Malta, a survey of land use', was produced by H. Bowen-Jones and J. C. Dewdney, at Durham, in 1959.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ8 Malta EZ8
Malta

#311
●102
243



[p. 196-A]

Fig. 71 Malta: Land Use Survey.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malta

*311
●10
243

Fig. 71

[p. 196-8]

*311
●1027
243

198

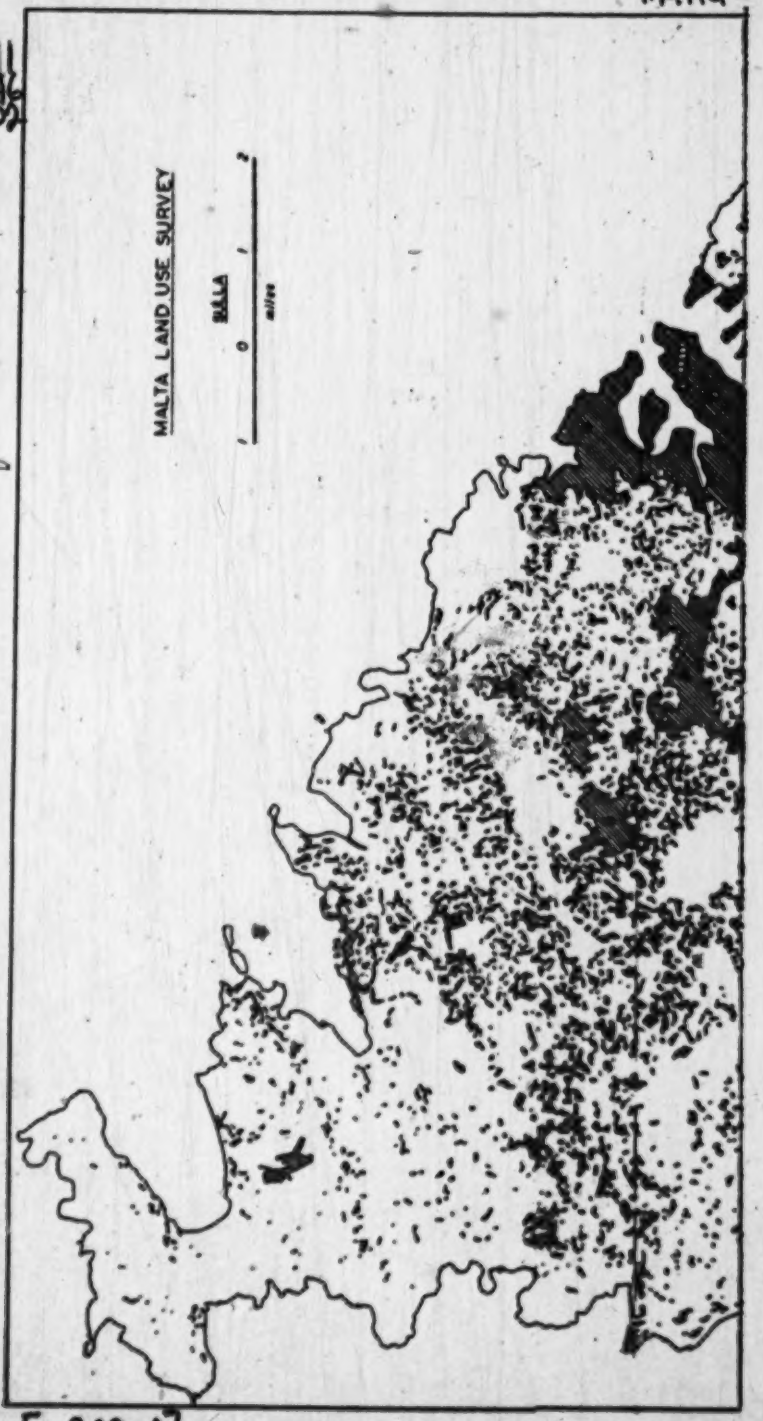
1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

Fig. 72 Gozo: Land Use Survey: Wheat and Barley.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malta

*3
24
10



[p. 200-A]

Fig. 73 Malta: Land Use Survey: scale

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malta

311*
107●
246

Fig. 73
Malta: Land Use Survey: Sulla.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
GOZO

*311
●102
246

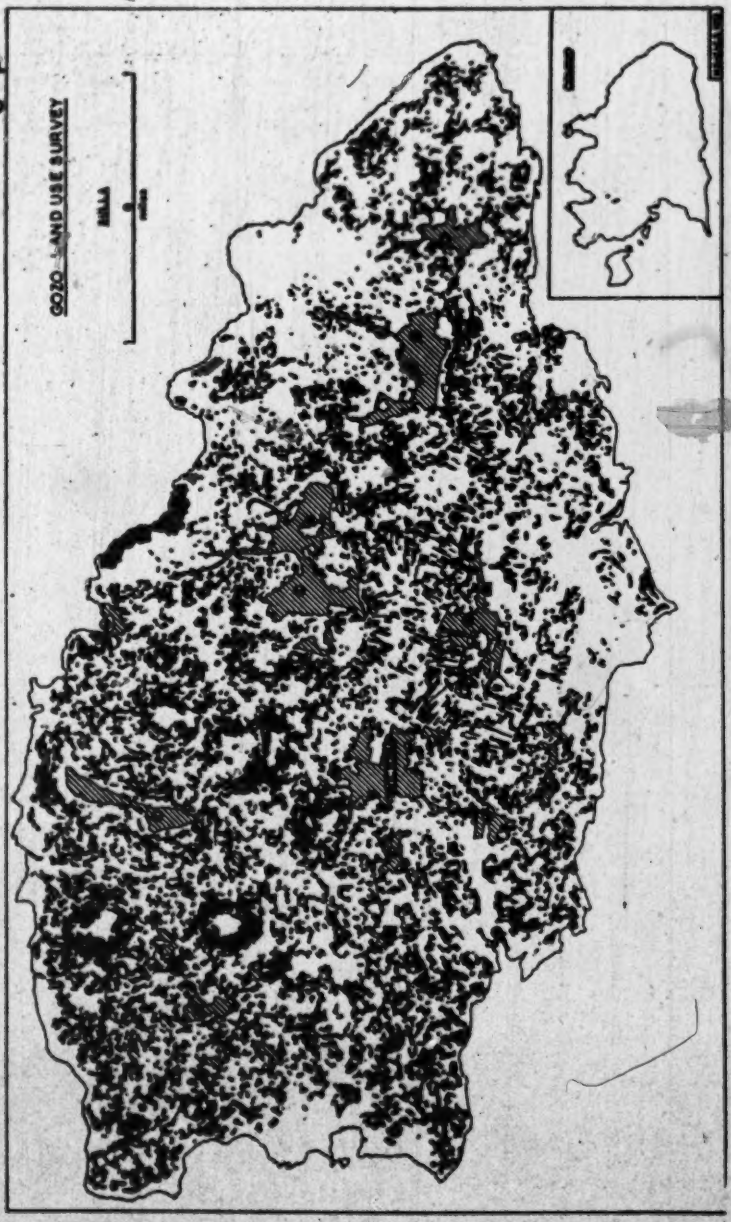
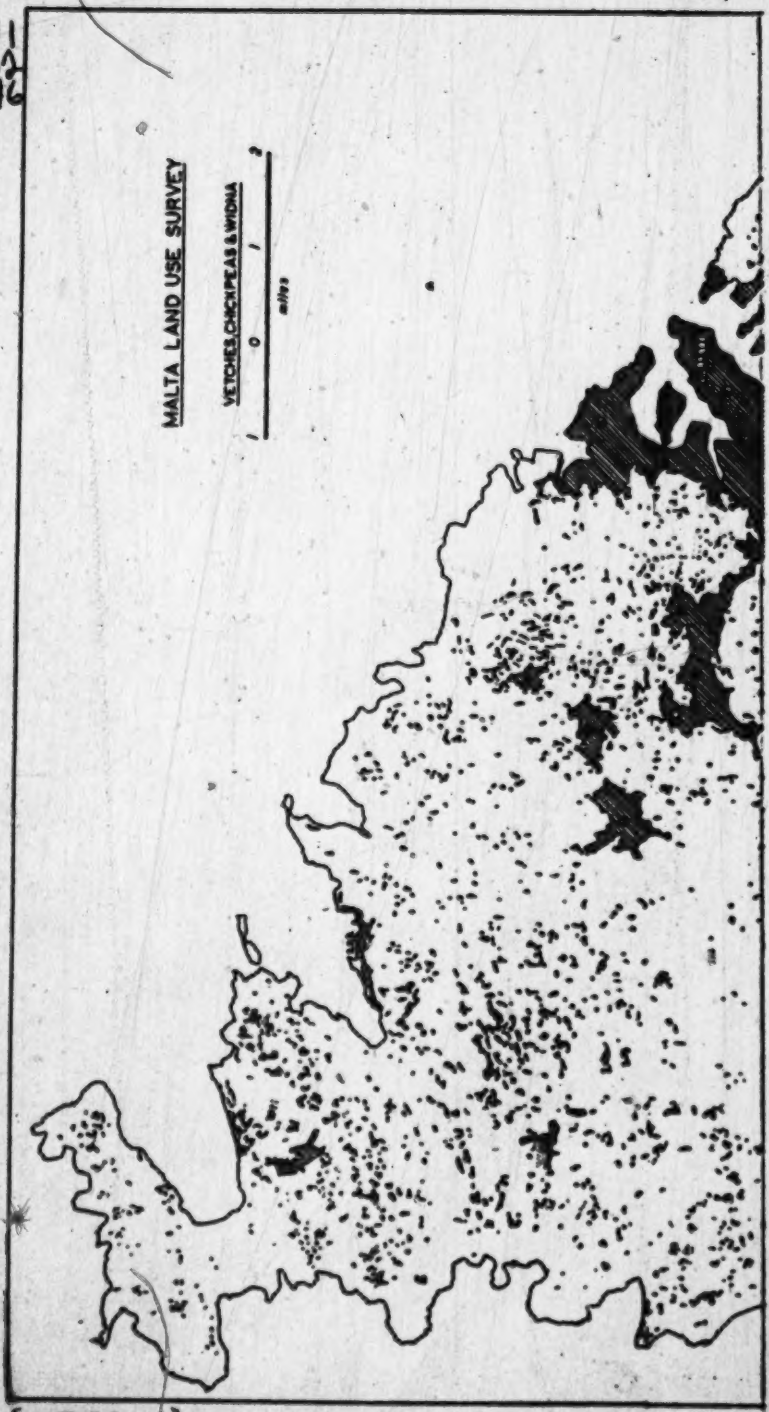


Fig. 74 Gozo: Land Use Survey: Sella.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta
*311
102
296



[p. 202-A]

Fig. 75 Malta: Land Use Survey: 1

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malt9

*311
●102
246

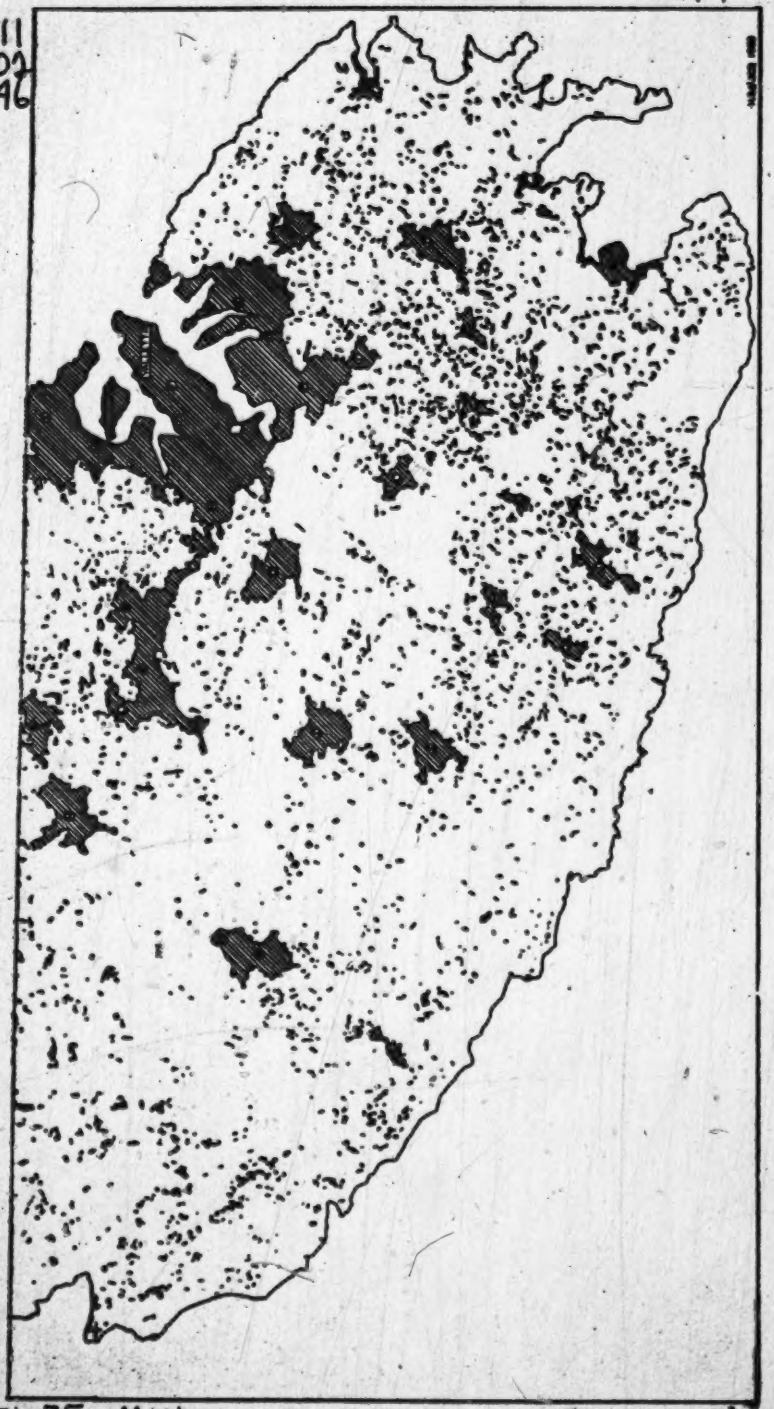


Fig. 75 Malta:
Land Use Survey: Vetches and Chickpeas.

[p. 202-B]

*311
102
342

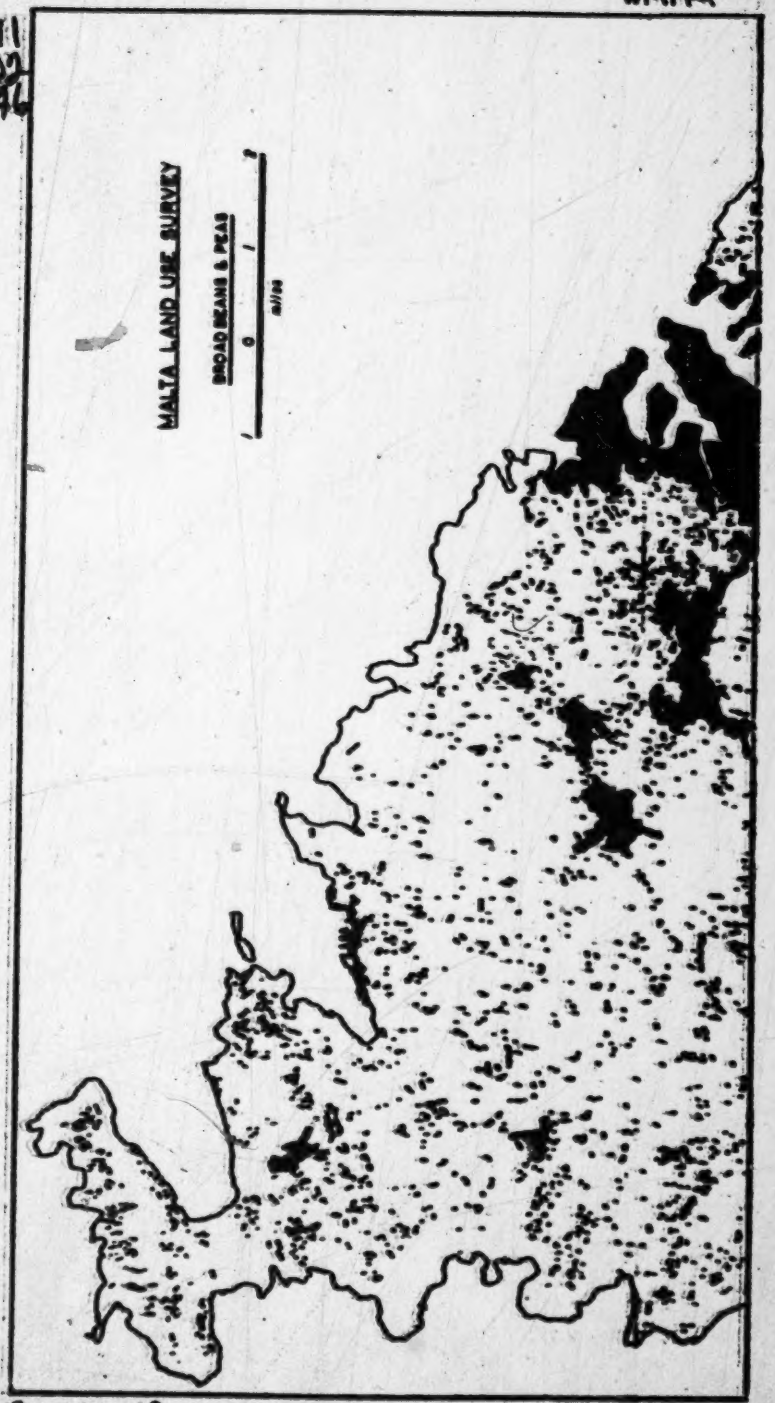
Fig. 76 Gozo: Land Use Survey: Vetches and Chickpeas.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malta

#311
c102
246



[p. 206-A]

Fig. 77. Malta: Land Use Survey:

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6

Malta

311 *
102 ●
246

Fig. 71 Malta:
Land Use Survey: Broad Beans and Peas.

[p. 206-B]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

#311
●102
216

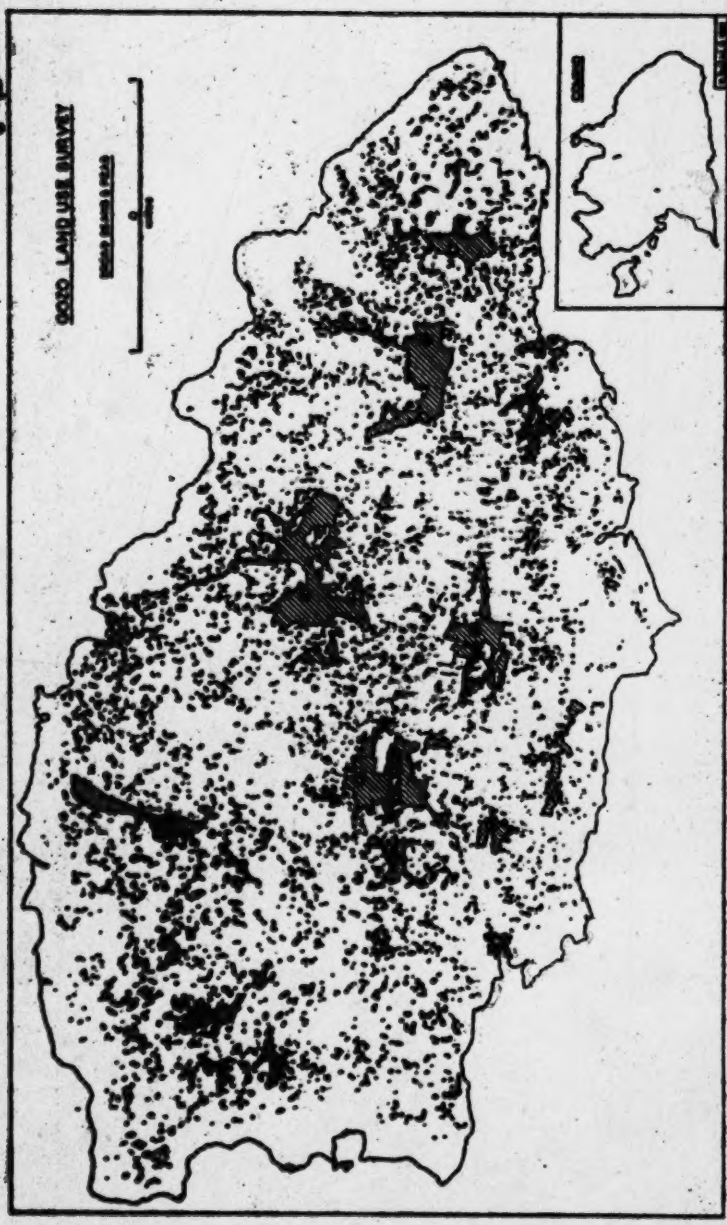
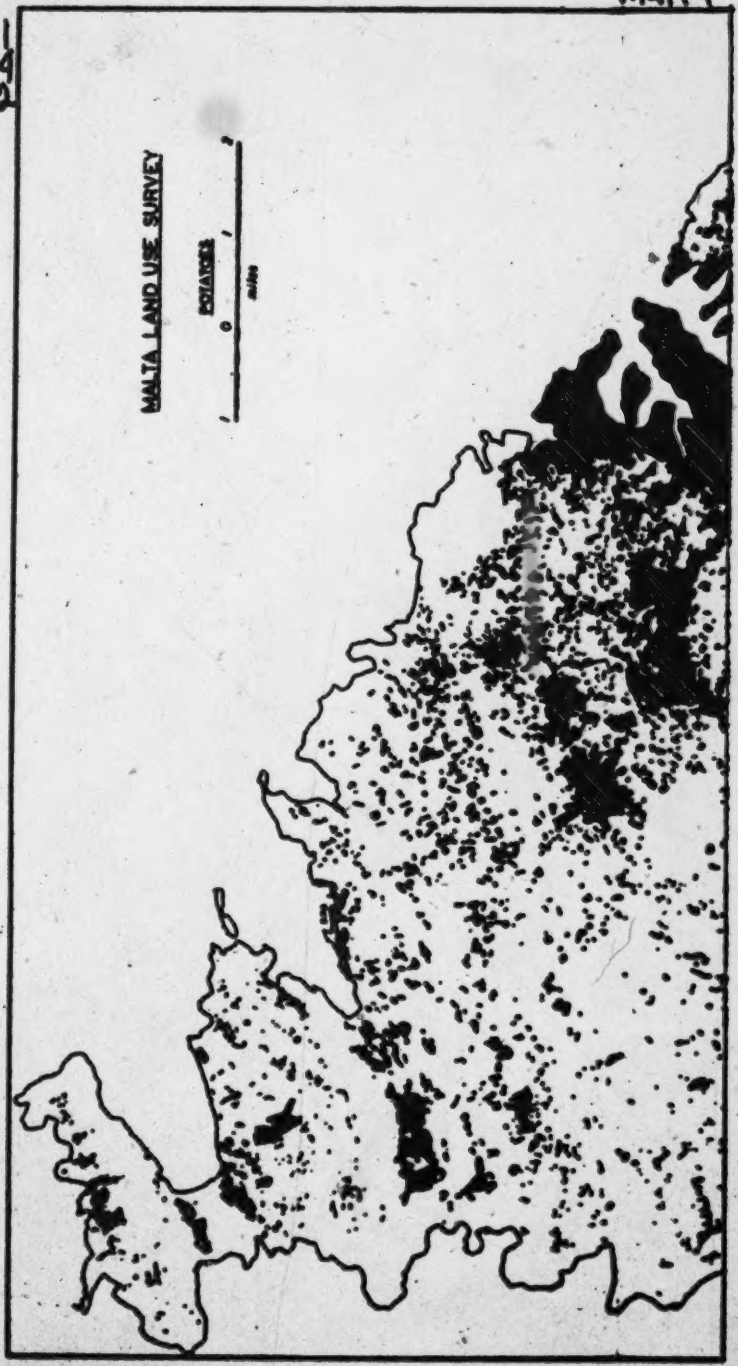


Fig. 78 Gozo: Land Use Survey; Broad Beans and Peas.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
MaIT9

*311
294
102



[p. 208-A]

Fig. 78 Malta: Land Use Survey: Potatoes.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6

Malta

311 *
102 ●
249

Fig. 79

Malta: Land Use Survey: Potatoes.

p. 208-B

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

#311
●102
244

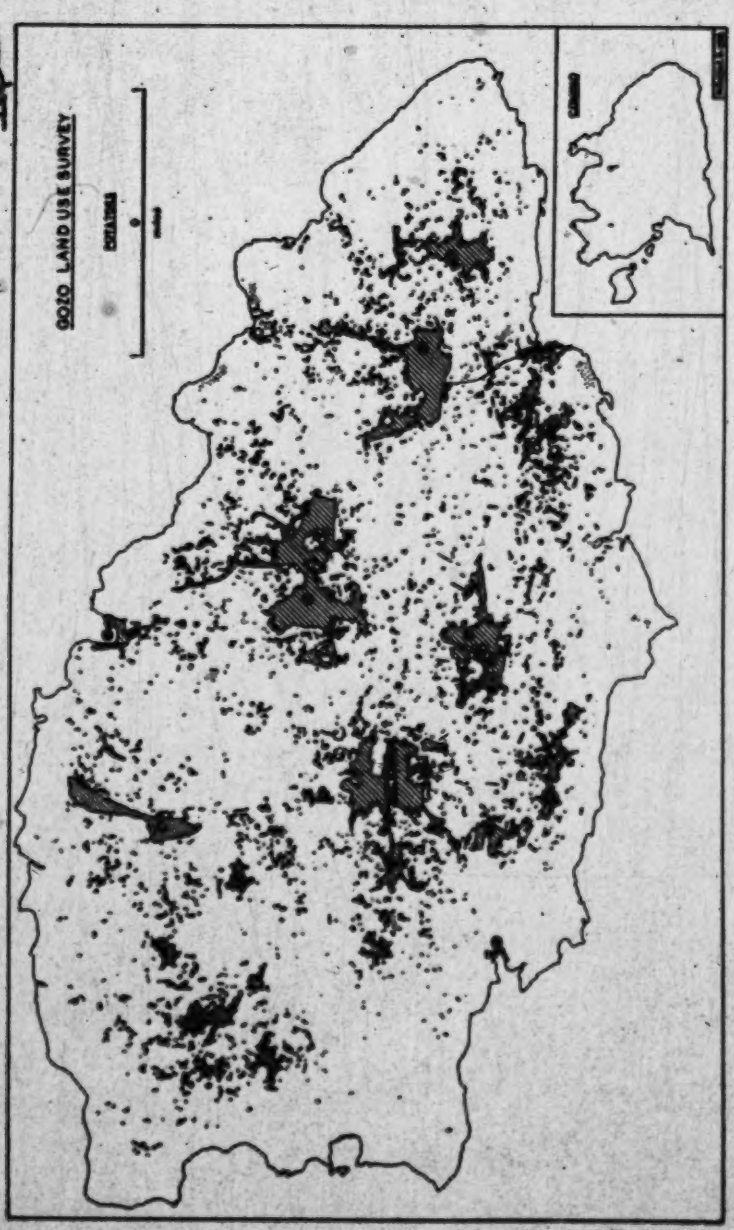
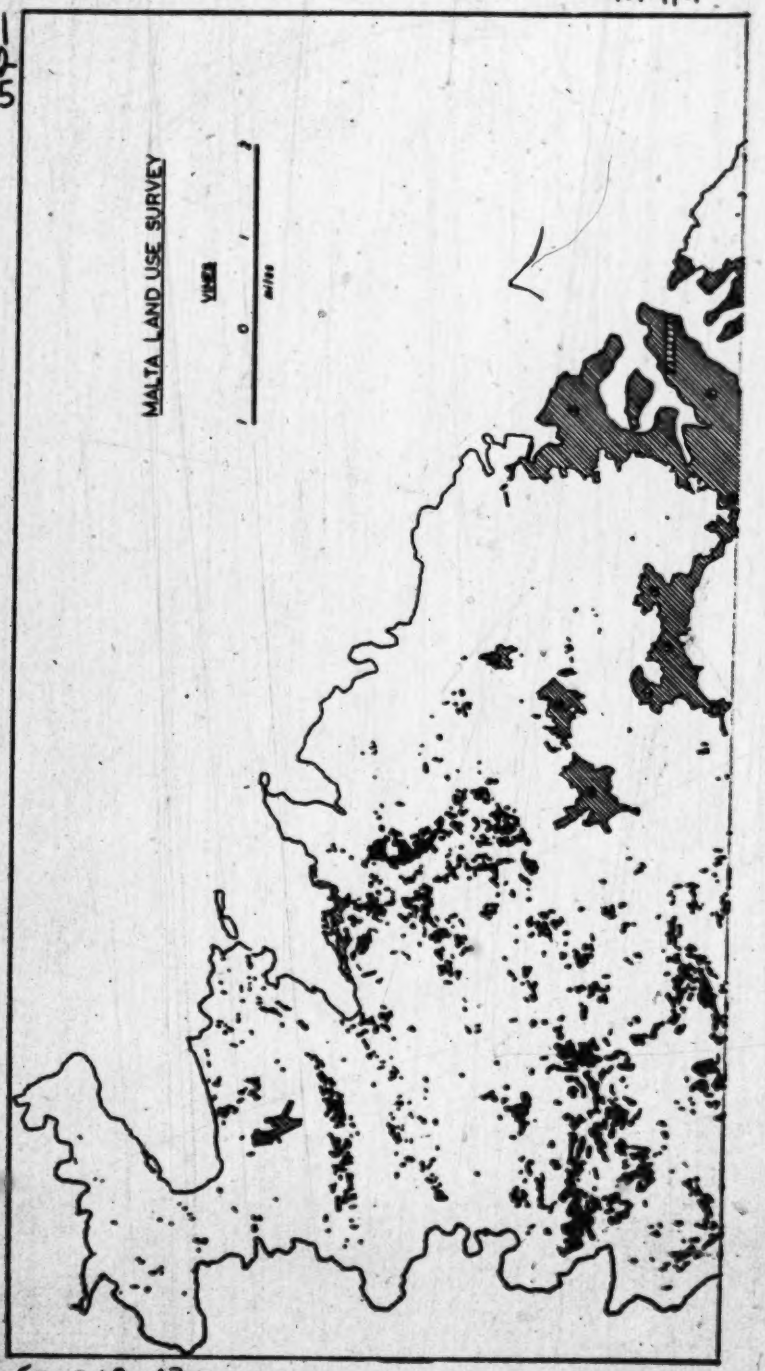


Fig. 80 Gozo: Land Use Survey: Potatoes.

EZ6 Malta EZ6
Malta

*311
●102
295



[p. 210-A]

Fig. 81 Malta: Land Use Survey: Vines

Malta

*311
●102
245

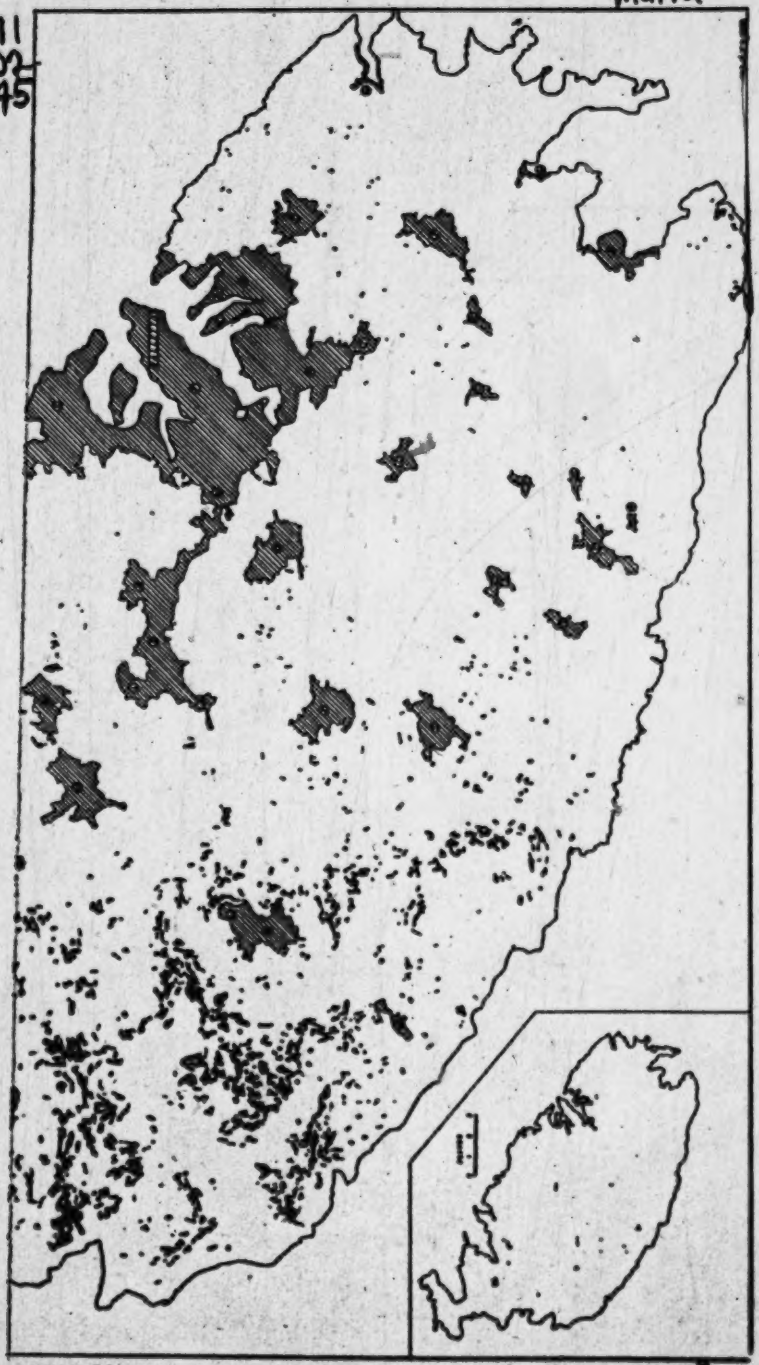


Fig. 81
Malta: Land Use Survey: Vines

[p. 210-B]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

*311
102
245

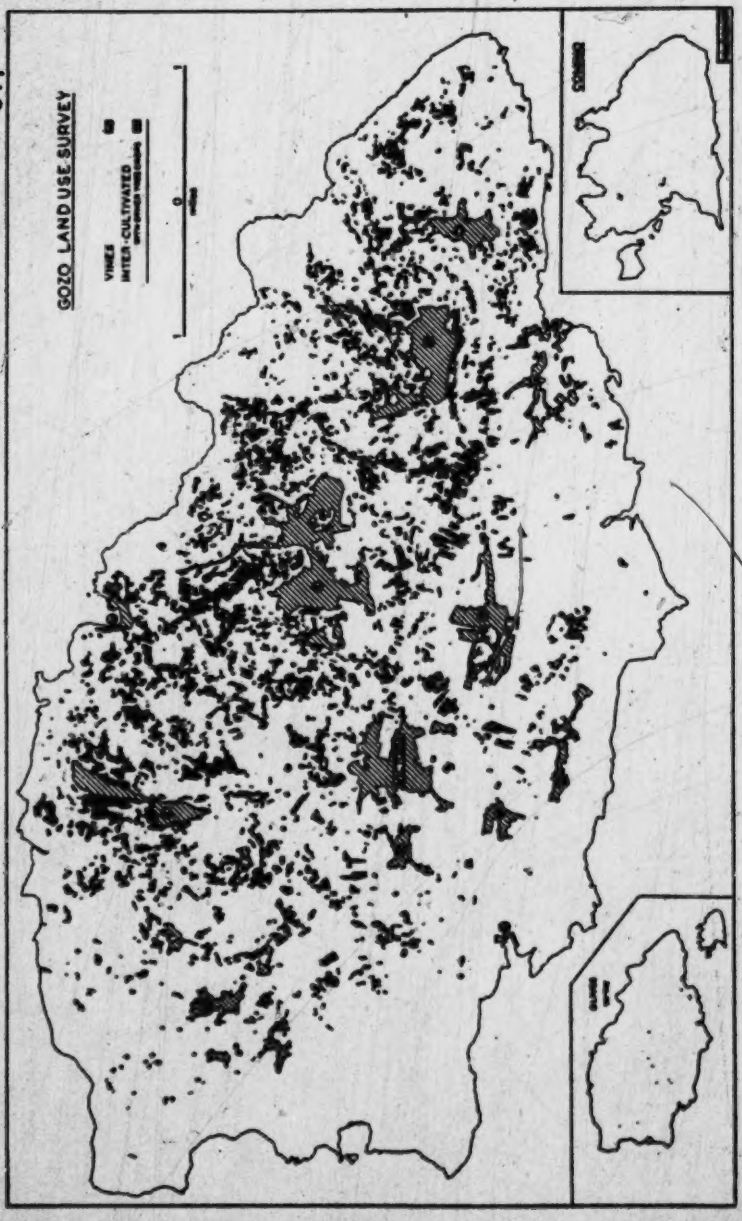


Fig. 53 Gozo: Land Use Survey: Vines.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

VINES

Viticulture, has suffered many vicissitudes. Needing irrigation water only for the raising of scions, the vine would seem a crop plant eminently suitable for all but the thinnest dry calcareous soils. No satisfactory reason has yet been adduced for the present absence of 'expertise' in this field, and this unsatisfactory state of affairs is a Mediterranean anachronism. Since Giacinto (3) wondered at Maltese oenological ignorance various improvements have taken place. Stock is American in origin imported during the Phylloxera epidemic in Europe. Scions are officially imported for grafting and are mainly from France. On the whole, too little specialisation is found, grapes being grown both for table use, fetching prices about £4 per qantar (175 lb. ave.), and for pressing - controlled prices 46s. to 48s. per qantar depending on quality. Commercial success in any other than the home market will depend entirely on whether the viticulturalist can now be weaned from quantity production to quality production. Products at present, while being remarkably good value, are not suitable for profitable export.

In Malta (Fig. 81), there is a striking concentration of viticulture in the western half of the island. In contrast to general Mediterranean practice, vines occupy much of the best watered heavy land of the Blue Clay slopes. Secondly, vines are of importance in the larger depressions with plentiful sub-soil water, for example the Wied il-Ghasel, the Bingemma Basin, and Mizieb. Those cultivated areas of the north and west which rely on pump irrigation - such as the Wied tal-Pwales, and the Rabat-Dingli upland pockets - have little land under vines. Over the remainder of the island, vines are mainly represented by wall- and house-side plants which, mainly for domestic use, are becoming of less importance as field cultivation is extended. This extension of acreage is taking place almost entirely in the traditional regions of the west.

As shown in Fig. 83, viticulture in Gozo, occurs in a great variety of conditions and there is a much greater extent of inter-cultivation with other tree-crops. Such inter-cultivation is particularly found in the *gnieh* zones - the spring line belts lying below the Upper Coralline mesa cappings - as around Zebbug and Nadur. North of Nadur, it extends into the Wieds San Blas and Dahlet Qorrot. Except in the remote western lands and on the thin soils of the southern hills, vines are found everywhere; in the central mixed-soil lowlands, in the open northern valleys and on the eastern coastal slopes. This reflects the traditional self-sufficiency of the Gozitan farm economy, a point also brought out by the large number of wineries (see p. 213). The vine is also inter-cultivated with sulla which, undersown annually, is a useful soil-renewing and cleaning crop.

OLIVES

Inset maps, Figs. 81 and 83. Malta must be the only Mediterranean land where the tradition of olive cultivation has almost disappeared. Vegetable oil consumption is high and has to be supplied by imports costing on average nearly £300,000 per annum. Olive cultivation has been more extensive in the past as attested by place names such as Zebbug - the place of the olive, and Zejtun - olive tree, and is still perfectly feasible over a great deal of under-utilised land. Various reasons for this strange situation have been mooted, ranging from the completely invalid belief that the olive cannot stand sea-air to the inadequate charge that tenurial security is insufficiently great. The matter is still a mystery.

Recent extensions of planting, particularly at Salinas and on Bajda Ridge, have been Government-sponsored, and the latter case is basically a scheme for the afforestation of a water catchment and percolation area.

CITRUS FRUITS

Because of their large water requirements, oranges and lemons are of orchard importance only along the Upper Coralline - Blue Clay springlines in Western Malta and Eastern Gozo. Scattered trees and very small plots are found in many districts, often in the most unlikely places. The Seville orange, once of considerable importance, is now rarely found and most of the old trees have

[TEXT CONTINUES ON P. 217]

EZ6 Malta EZ6
MalTa

*311
102
245

[p. 214-A]

Fig. 83 Malta: Land Use Survey: Fruit.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
MalT9

311*
102 ●
245

Fig. 83
Malta: Land Use Survey: Fruit.

[p. 214-B]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
GOZO

*311
●102
245

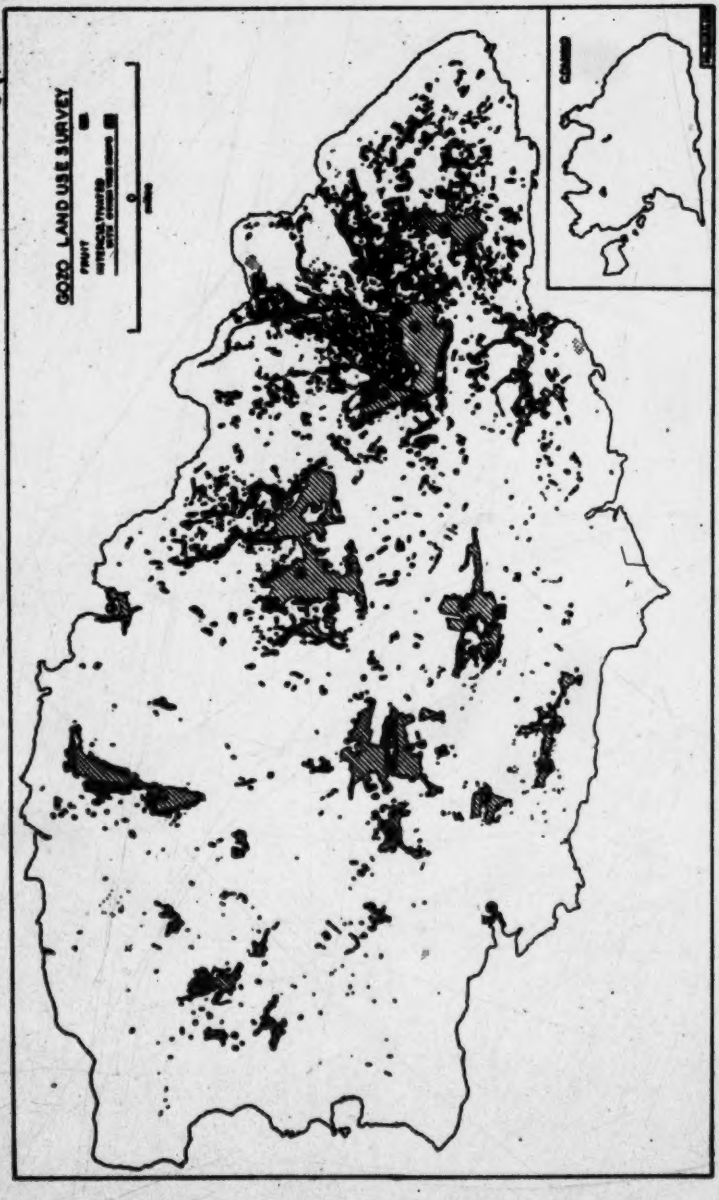


Fig. 84 Gozo: Land Use Survey: Fruit.

EZ6 Malta EZ6
Malta

*311
●102
244

[p. 216-A]

Fig. 85 Malta: Land Use Survey: Tomatoes, Marrows, etc.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malta

Fig. 85 Malta: Land Use Survey: Tomatoes, Marrows, etc.

[p. 216-B]

*31
•102
244

Fig. 86 Gozo: Land Use Survey: Tomatoes, Marrows, etc.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malta

*311
●102
244

[p. 220-A]

Fig. 87 Malta: Land Use Survey: Onions.

EZ6 Malta EZ6
Malta

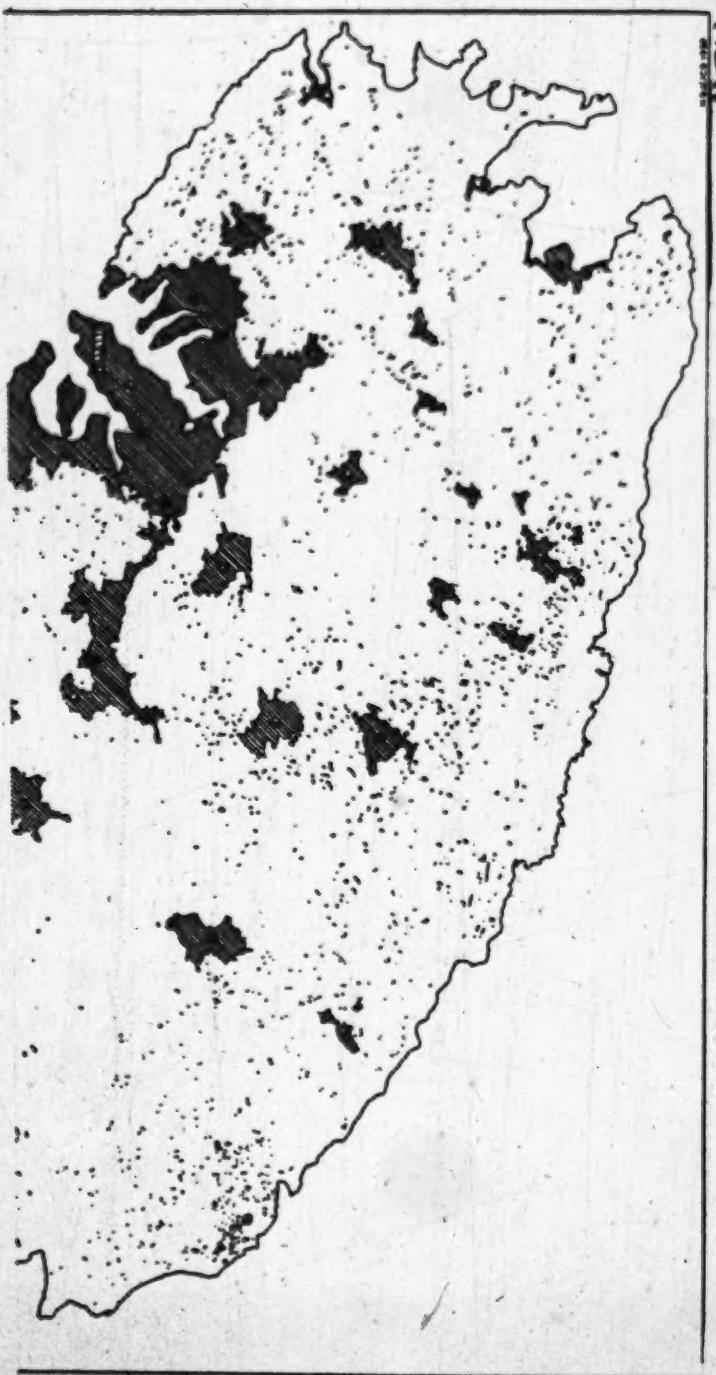


Fig. 87 Malta:
Land Use Survey: Onions.

[p. 220-8]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

*311
•107
344

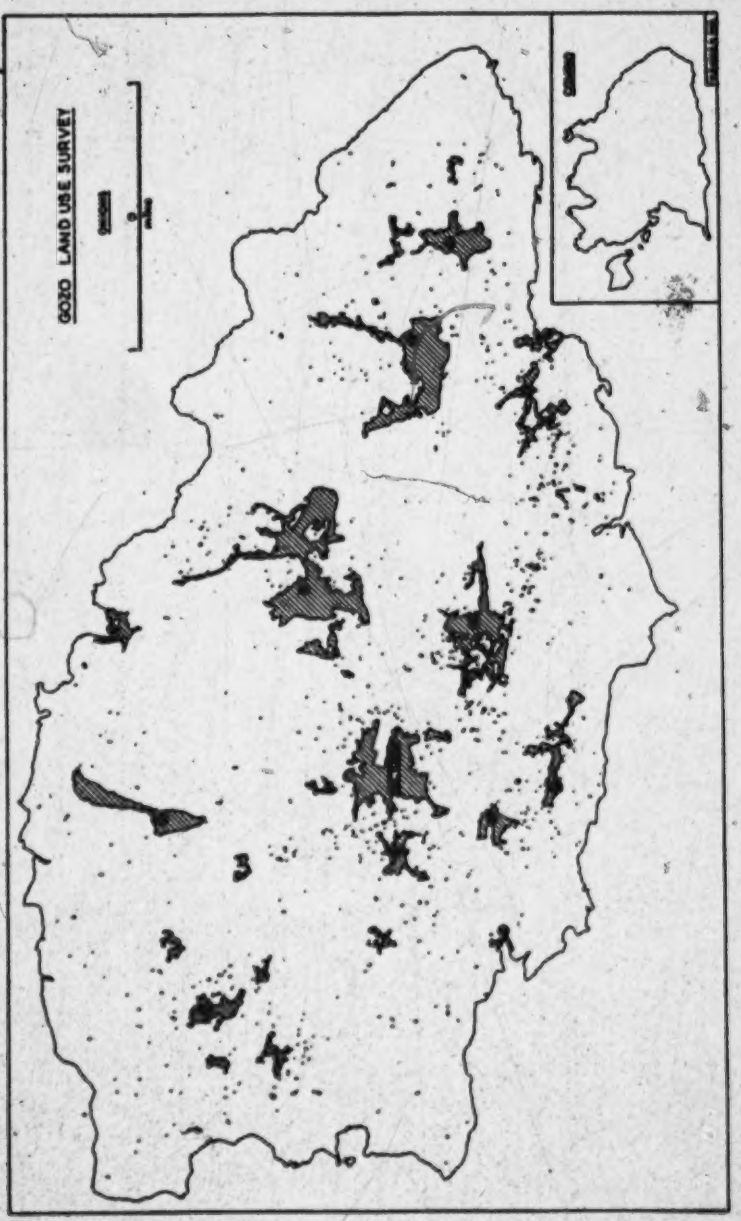


Fig. 88 Gozo: Land Use Survey: Onions.

EZ6 Malta EZ6
Malta

+311
● 102
244

[p. 222-A]

Fig. 89 Malta: Land Use Survey; Vegetables.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malta

311 *
101 ●
249

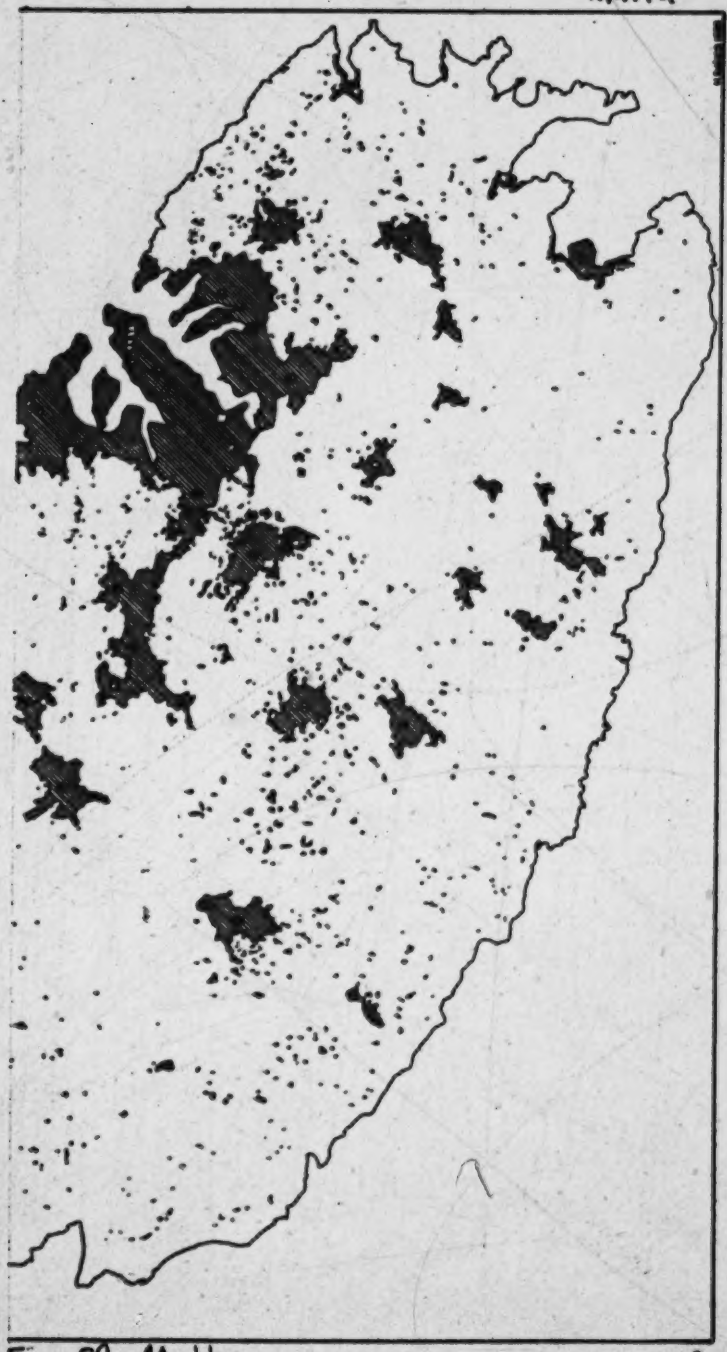


Fig. 89 Malta.
: Land Use Survey: Vegetables.

[p. 222-B]

*311
●102
244

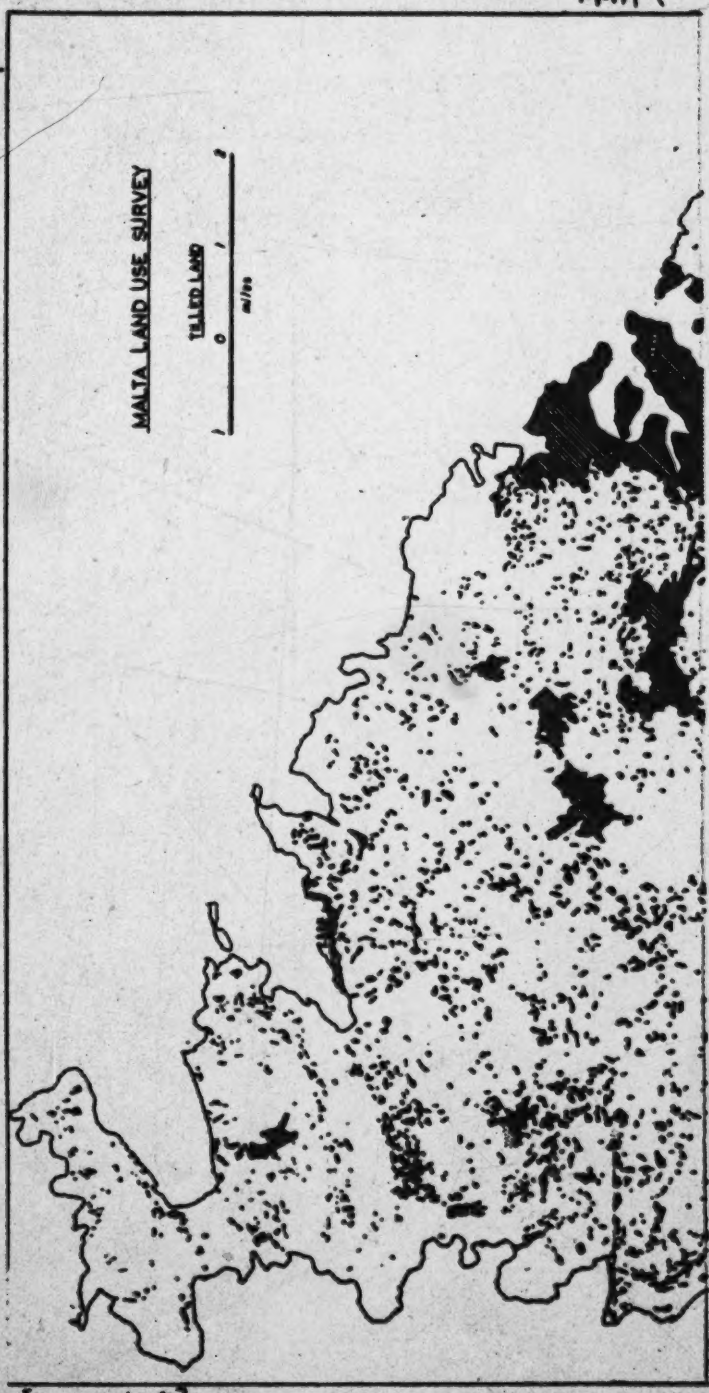
Fig. 90 Gozo: Land Use Survey: Vegetables.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
E26 Malta E26
Gozo

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malta

*311
●102
241



[p. 224-A]

Fig. 91 Malta: Land Use Survey: Tilled Land.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malta

311+
102●
241

Fig. 91 Malta:
Land Use Survey: Tilled Land.

[p. 224-B]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

*311
●102
241

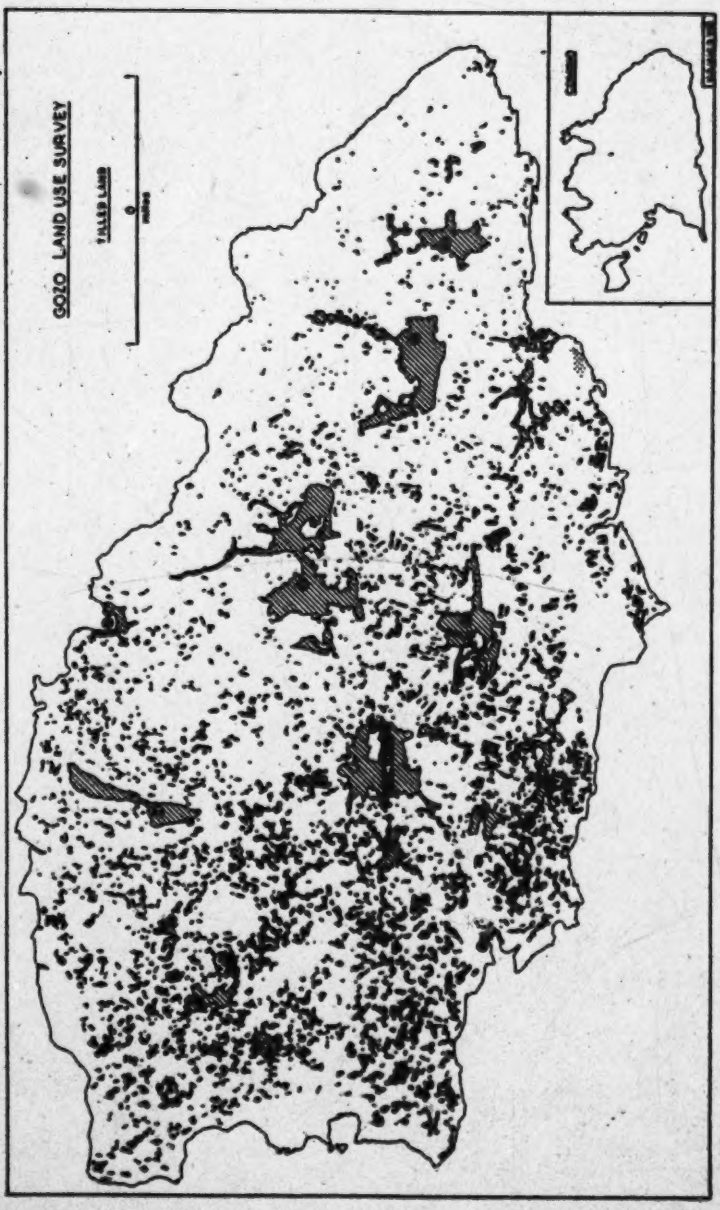


Fig. 93 Gozo: Land Use Survey: Tilled Land.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta
*311
●102
241

[p. 228-A]

Fig. 93 Malta: Land Use Survey: Fallow

1: Bowen-Jones et al. K-5 (1966-1968) 1981

EZ8 Malta EZ8
Malta

311
102
141

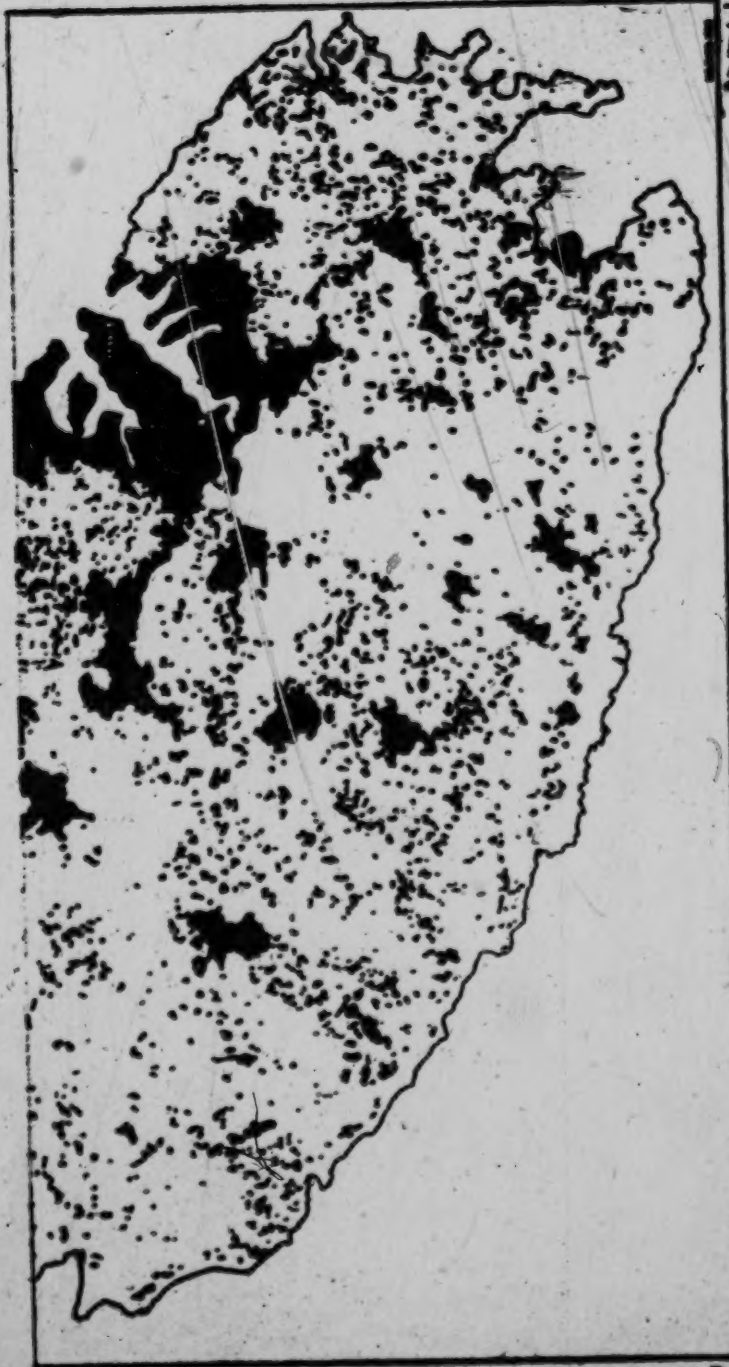


Fig 93 Malta:
Land Use Survey: Fellow.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

+311
●102
233
241

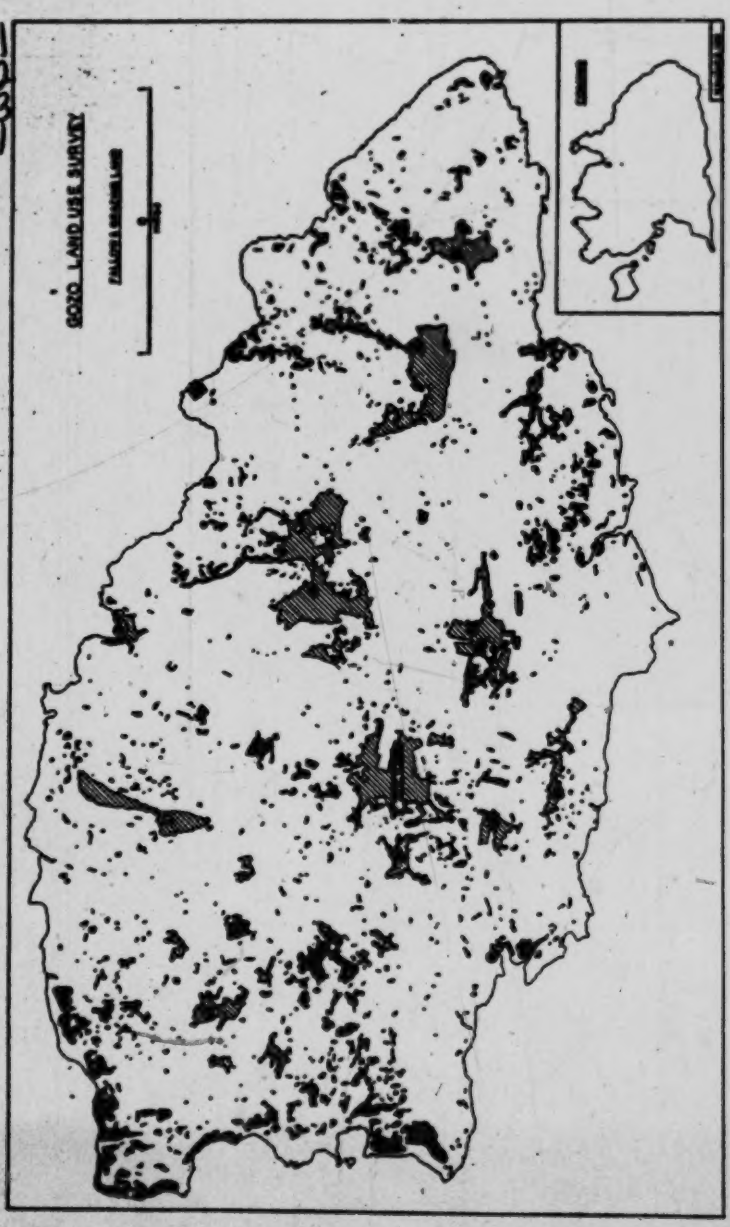


Fig. 84 Gozo: Land Use Survey: Fallow and Grazing.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
MALTA

[p. 230-A]

Fig. 85 Malta: Land Use Survey; [illegible]

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6

Malta

311*
102

Fig. 95

[p. 230-B]

*311
162

Fig.98 Gozo: Land Use Survey: Wasteland.

I:Bowen-Jones et al. IK-5 (1955-1958) 1960
E26 Malta E26
G020

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta
#311
●102
361

[p 232-A]

Fig. 97 Malta: Land Use Survey: Non-Agricultural Use.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6

Malta

311*
102●
361

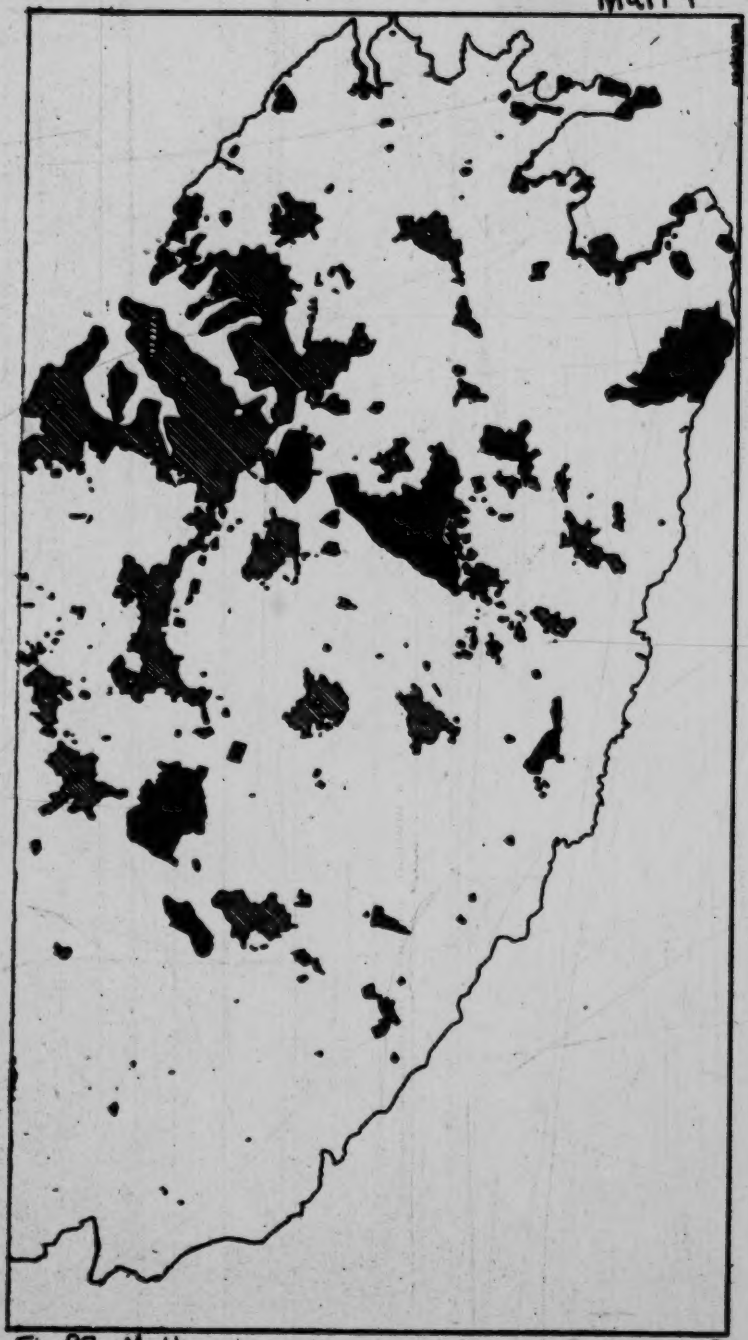


Fig. 97 Malta:
Land Use Survey: Non-agricultural Use.

[p. 232-B]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

*311
●102
361

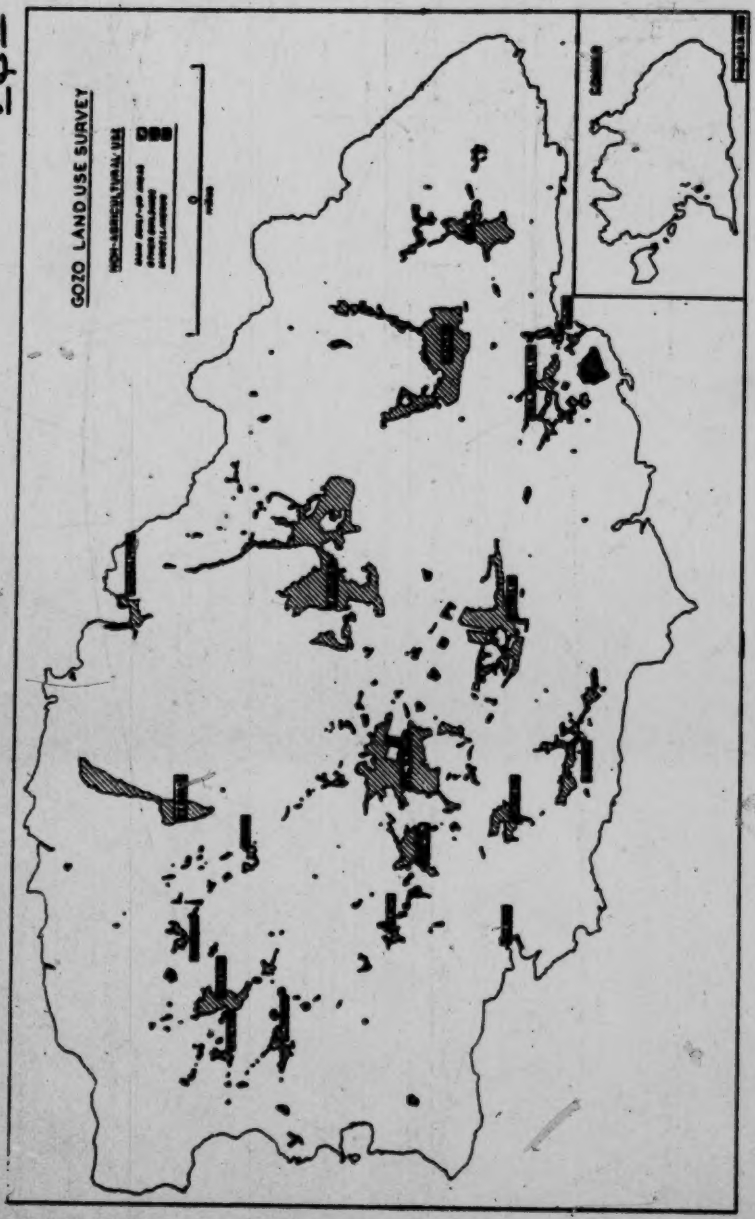
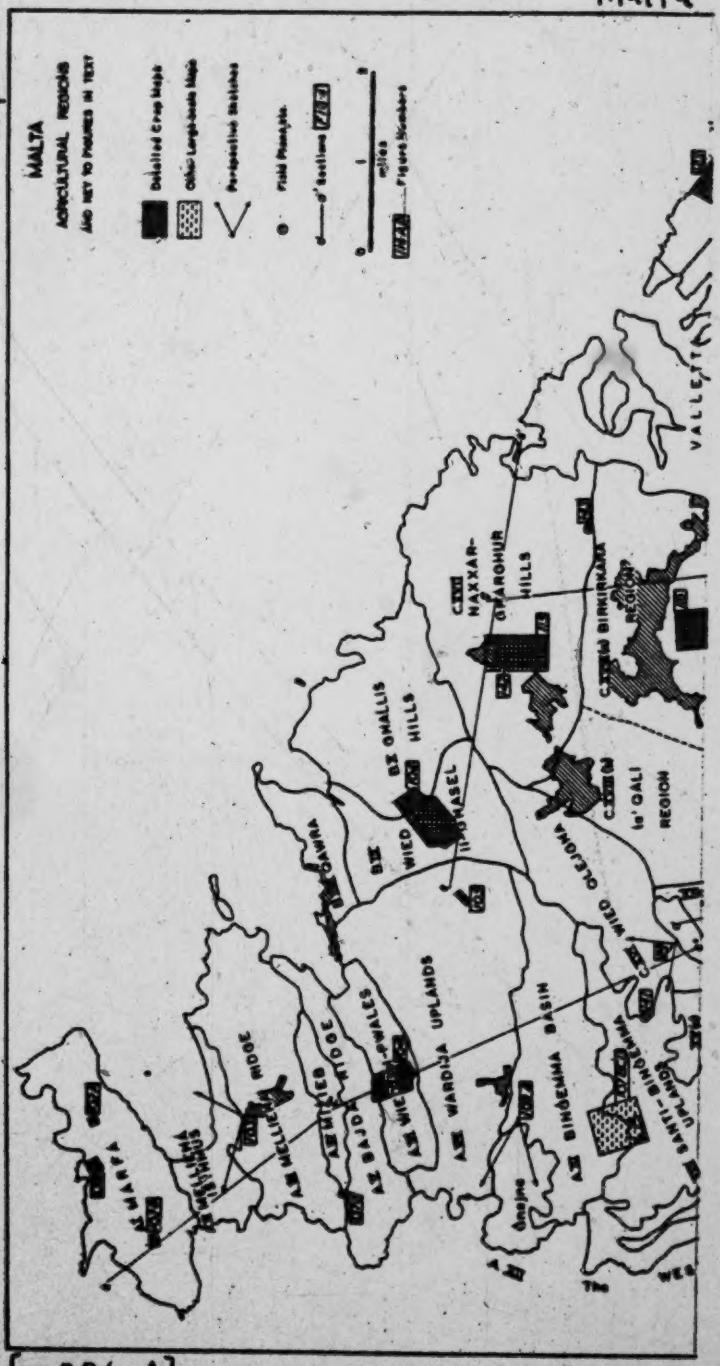


Fig. 38 Gozo: Land Use Survey: Non-agricultural Use.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malta

*241
*311
●102
128



[p. 236-A]

Fig. 88 Malta: Agricultural Regions

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
MALTA

241*
311*
102●
128

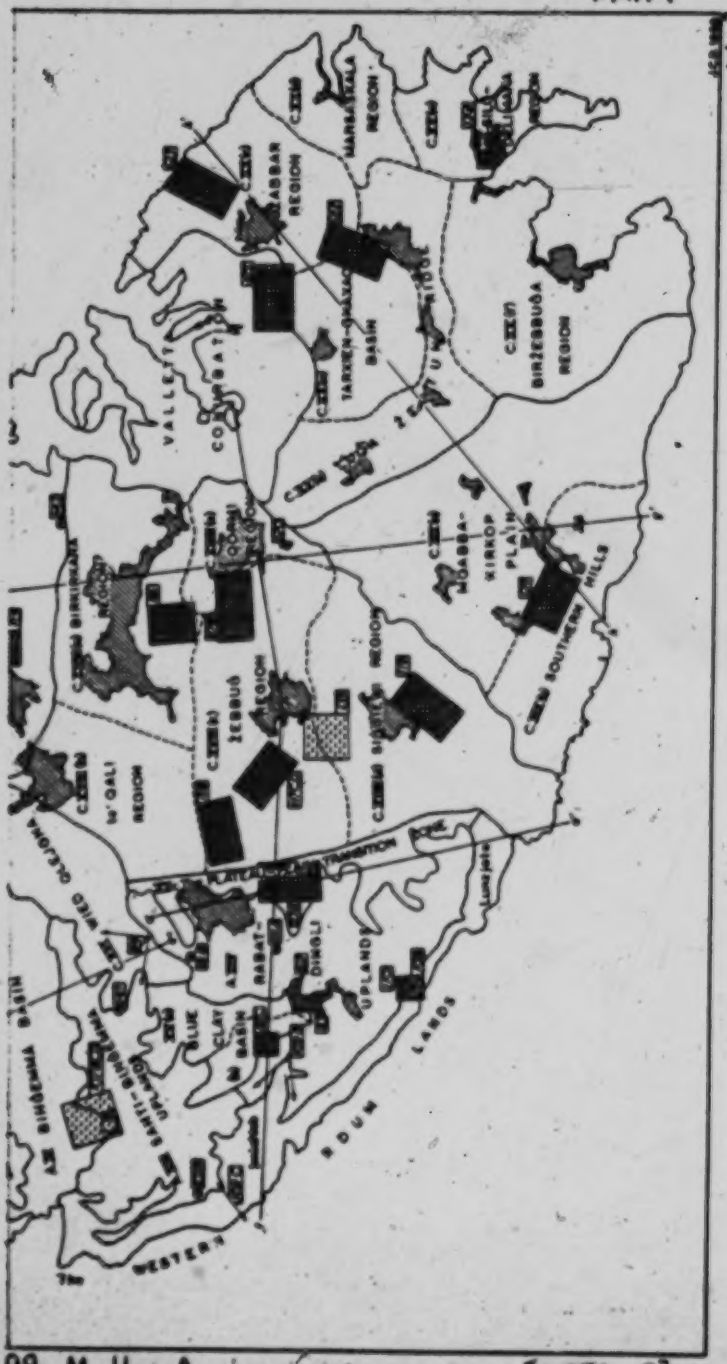


Fig. 99 Malta: Agricultural Regions and Key to Figures in Text.

[p. 236-B]

*24!
*211
●103
128

Fig. 100 Gozo: Agricultural Regions and Key to Figures in Text.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

*241
*311
[102]

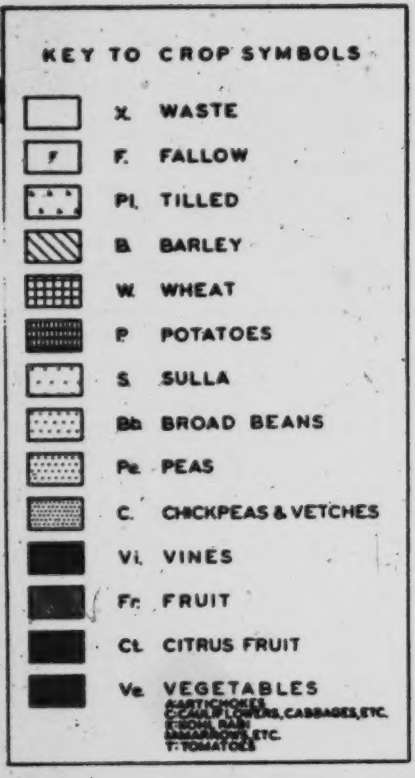


Fig. 101 Key to Crop Symbols as used in Figs. 102-132 inclusive.

[891] building has been influenced not only by the needs of the farming community but also by military and, more recently, by tourist requirements adds a further element to an already complicated pattern. Isolation is a social and economic matter as well as a physical one. For all these reasons, detailed regional study is necessary before the full range of conditions present in this region can be appreciated.

A point of particular application to the Scarplands is their economically marginal character. It is here that development and neglect, advance and withdrawal of the 'cultivation frontier' have been most effective, reflecting changes in the economic and social position of agriculture and the rural community. Thus published maps of this region show a rectilinear pattern of roads, tracks and field boundaries which takes no account of topography, contrasting with the older field pattern on which it is often superimposed. This palimpsest of economic change appears mainly on land once Government owned and is most extensive in Marfa, the northern flanks of Mellieha Ridge and on Bajda Ridge (Fig. 68).

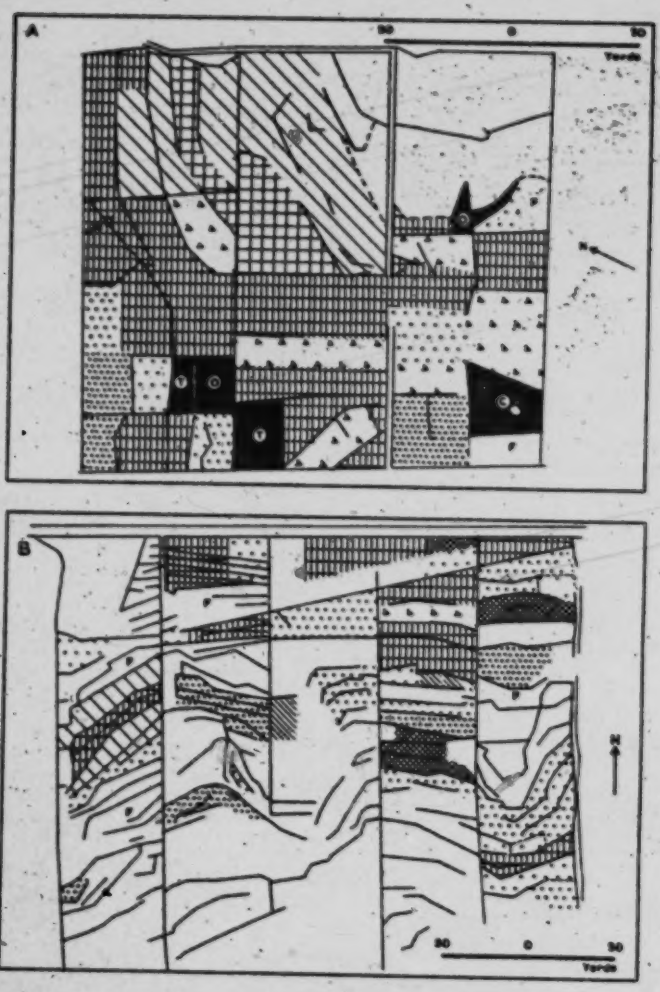
A.I. MARFA

Much of the peninsula is now *xaghra* land although a larger area has been cultivated in the past. Poor dry farming persists in a few areas such ta'Ramal

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

239

241*
311*
102●



MALTA - WESTERN SCARPLANDS
Marfa Peninsula
CROP PATTERNS (SPRING)
A : ta' Macca (5)
B : Ghajn Tuta (1)

Fig. 102 Malta: Western Scarplands: Marfa Peninsula.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malt9

*24
*31
102
133

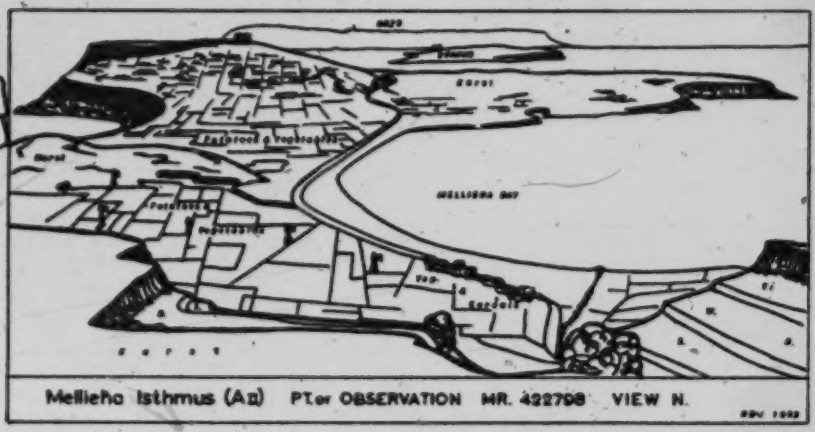


Fig. 103 Malta: Mellieha Isthmus.

(8)*, id-Dahar (Fig. 102 B) above the Wied Ghajn Tuta (1), and in smaller scattered plots. It also occurs in the undercliff zones of Rdum tal-Qammieh (9)* (significantly, 'Qammieh' means 'wheat-producing') and Rdum tal-Ahrax (10) where Blue Clay and Globigerina outcrop beneath the Upper Coralline scarp. A few small homesteads are sparsely scattered over these zones. In the small valleys which open to the north, such as Wied Musa (2) and ta'Maċċia (5) (Fig. 102 A), wind-pump irrigation and road development have allowed the introduction of commercial cultivation of potatoes and vegetables. Field boundaries have been recast, new farms built and cultivation extended on to former wasteland. The utilisation of these small oases is essentially precarious as sea-spray salinity on the one hand and ground-water salinity induced by over-pumping on the other set definite limits to productivity. Abandoned wind pumps mark points at which these limits have been over-stepped.

Thus in the region there occur simultaneously both slow abandonment of the harder lands and reclamation of especially favoured pockets.

A.II. MELLIEHA ISTHMUS (Fig. 103)

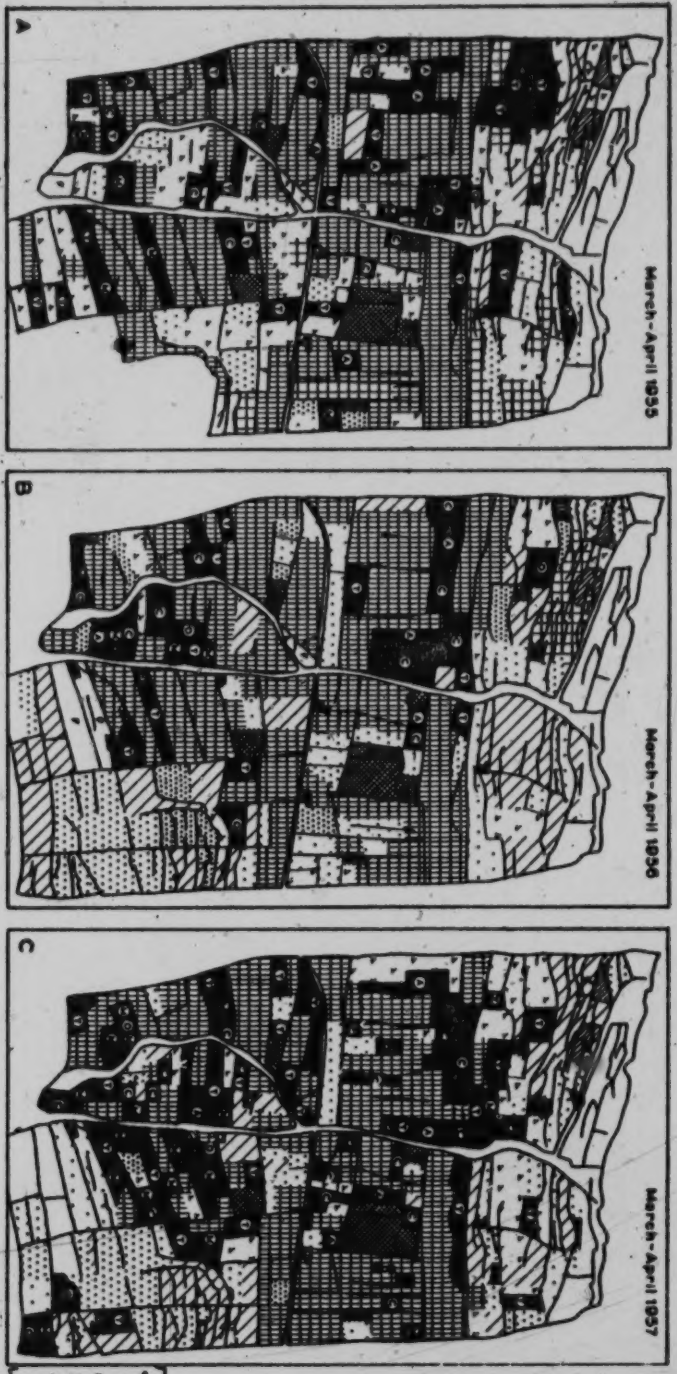
There are three separate areas of cultivation. Il-Ghadira (11) and il-Hofra (12), lying on either side of a barren karstic hill, are pump-irrigated for the production of potatoes and some summer vegetables. Good dry farming is represented by the marled slopes between Mellieha and the sea (13).

A.III. MELLIEHA RIDGE

Here, as in other, analagous regions, there is a natural association of central summit-lands with fringing valley embayments. In the west, rising in cliffs from the sea and more gently from the head of Mizieb, the ridge is almost entirely waste, although a few small plots of minor fodders and beans have survived abandonment. Near Mellieha, in contrast, small scale reclamation is extending an area of rather more intensive cultivation. This is associated with the rapid growth of Mellieha itself. Further to the east, topographic controls become dominant, cultivation, with one exception, being confined to the several depressions. Wied Imgiebah (19) is intensively cultivated in spring-watered high terraces near the cliffed coast. Further inland, where water is less plentiful,

*A number in brackets following a place name refers to Figs. 69 and 70.

241*
311*
102 ●



[p. 242-A]

241*
311*
102

1:Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

[413]

[p.242-B]

Fig. 104 Malta: Wied tal-Pwales.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

+241
+311
[102]

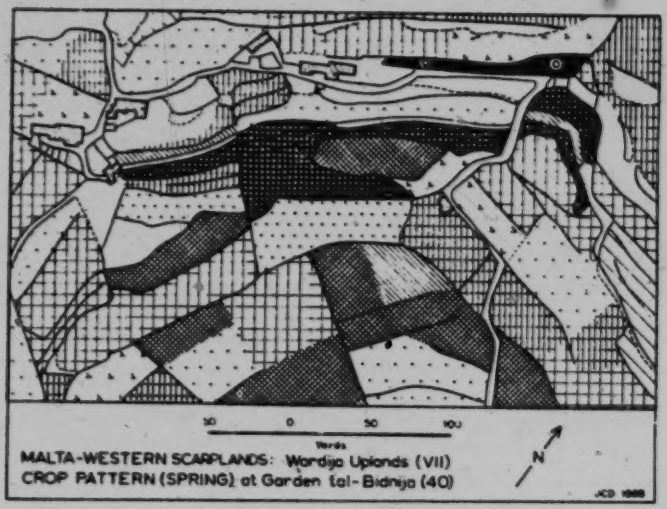


Fig. 105 Malta: Wardija Uplands.

tops. Around the many individual and clustered houses lie patches of cultivation in large pockets of Terra Rossa. Potatoes and cereals are dominant as at tal-Milord (39). South of the main ridge fork, this type of saddle topography falls away, between Mġarr and iż-Żebbieħ to the downthrown Bingemma Basin.

East of iż-Żebbieħ the Blue Clay outcrop zone appears, the southern extremity of a belt which overlooks the Wied il-Ghasel and includes Wied Qannotta (33). On these well watered but non-irrigated clay slopes, vines, cereals and sulla are dominant. The grapes of this zone are of some repute and command a higher price than the more watery products of Bur Marrad. Fruit cultivation is carried on on the Ġebel Għawżara slopes (43), within easy reach of a main road. In the Wied Qannotta (33), a similar type of landscape occupies the depression between the two limbs of the summit ridge. A few *ġnien* pockets, as at the Garden tal-Bidnija ('the garden of the prosperous one') (40) (Fig. 105), lie beneath the Coralline scarp.

B. THE WIED IL-GHASEL DISTRICT

Overlooked by the eastern summits of Wardija Ridge and separated from the rest of the island by the fault-scarp of the Victoria Lines, lies a region which is quite distinct in character. Belonging neither to the Scarplands nor to the Central hill and plain region, the Qawra Peninsula (VIII), Wied il-Ghasel (IX) and the Ghallis Hills (X) merit separate attention.

B.VIII. QAWRA PENINSULA and B.X. GHALLIS HILLS

The physical unity of these two regions is broken only by the presence of Salina Bay which lies between them. Very striking is the way in which the distribution of wasteland corresponds almost exactly with the surface exposure of

[Text continues on P. 247]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

245
241*
311*
102 ●

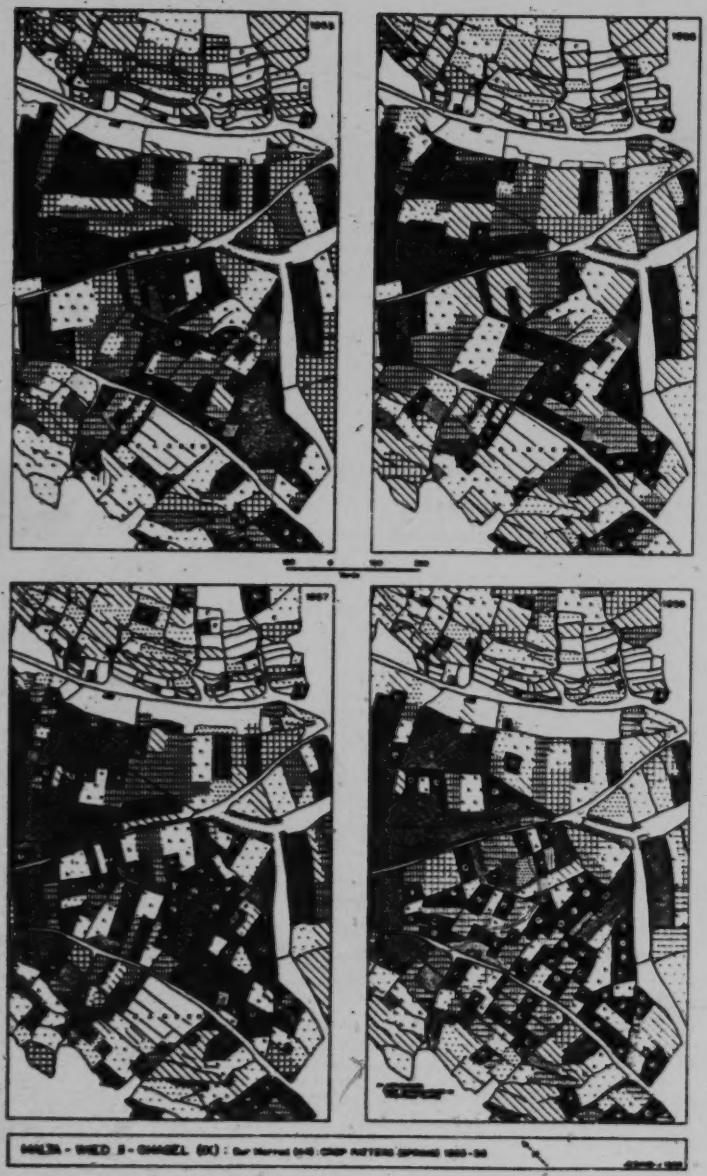
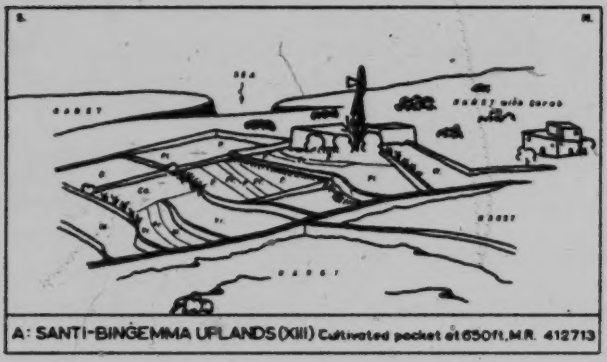
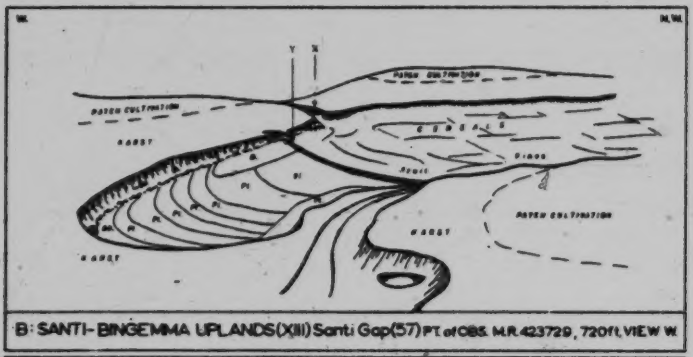


Fig. 106 Malta: Wied il-Ghasel.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

*241
*311
●102
133





[245] →
[312] ←

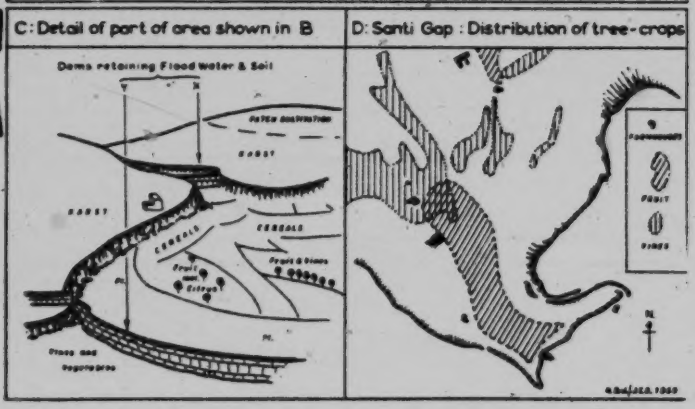


Fig. 107 Malta: Santi-Bingemma Uplands.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

*241
*311
[102]

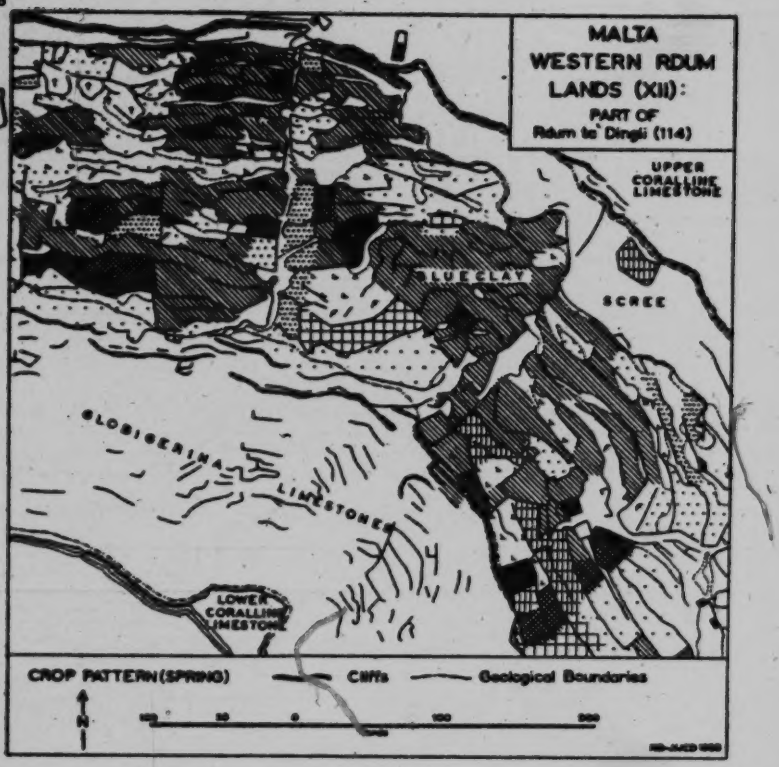


Fig. 108 Malta: Western Rdum Lands. Pt. of Rdum ta' Dingli.

Structurally and agriculturally part of the Binġemma Basin is the area west of the hamlet of l-Iskirvit (50). While Binġemma Basin proper is a zone of deep soil accumulation, this upstanding area is one of residual soils and Terra Rossa formation. On this exposed bluff a surprisingly large area is devoted to viticulture. There is a close working association between the western part of the Binġemma Basin as a whole and the Gnejna *rdum* lands. (See also pp. 250, 251 and pp. 307-315.)

Settlement within this region is, with the exception of l-Iskirvit, entirely peripheral. Mġarr, the only centre with any true urban functions, is continuing to spread along the basin edge and roads, iż-Żebbieħ showing similar characteristics on a smaller scale. Binġemma, by contrast a truly rural hamlet lying on an outwash fan beneath the southern scarp, has been overshadowed by the two northern settlements. L-Iskirvit, which marks the western edge of the main basin, has similarly stagnated.

A.XII. THE WESTERN *RDUM* LANDS

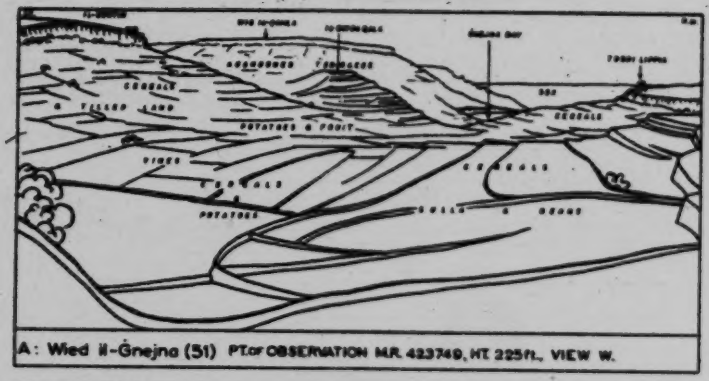
From the western edge of the Binġemma Basin southwards along the coast to tal-Bajjada (153), between the sea and the Upper Coralline edge, lies a zone which, in Maltese, bears the name of *Rdum* (=precipice). In parts of this zone,

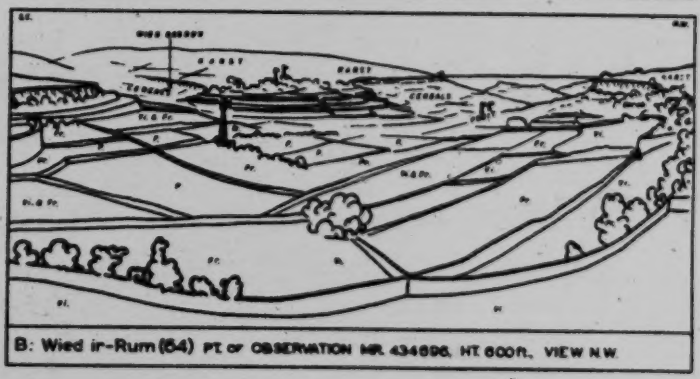
[Text Continues on P. 250]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

249

241*
311*
102●
133





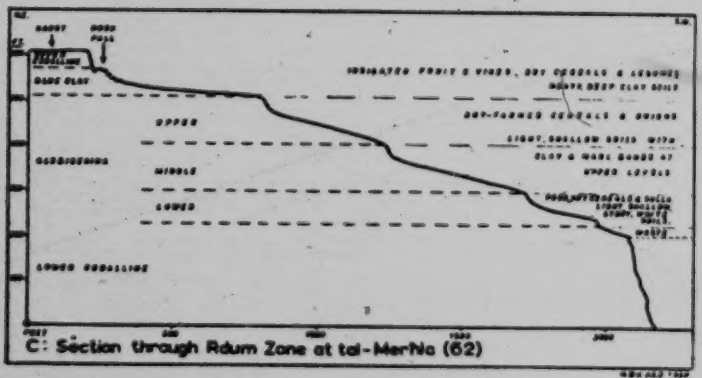


Fig. 109 Malta: Western Rdum Lands.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

*241
*311
[102]
[133]

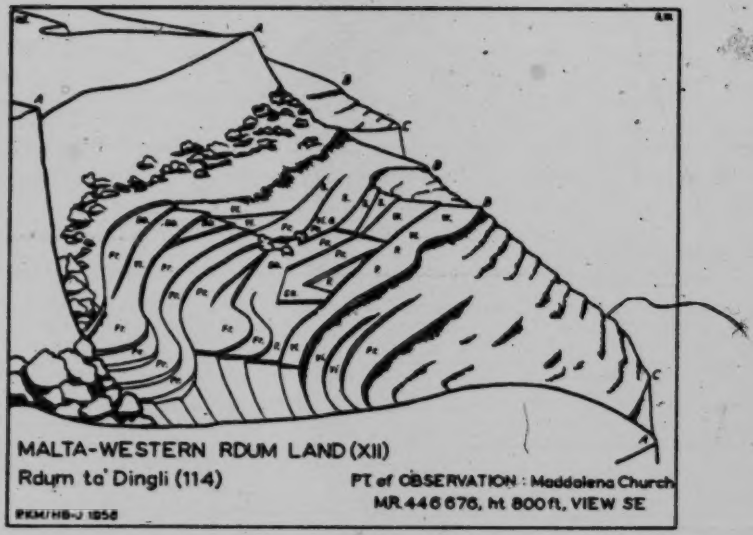


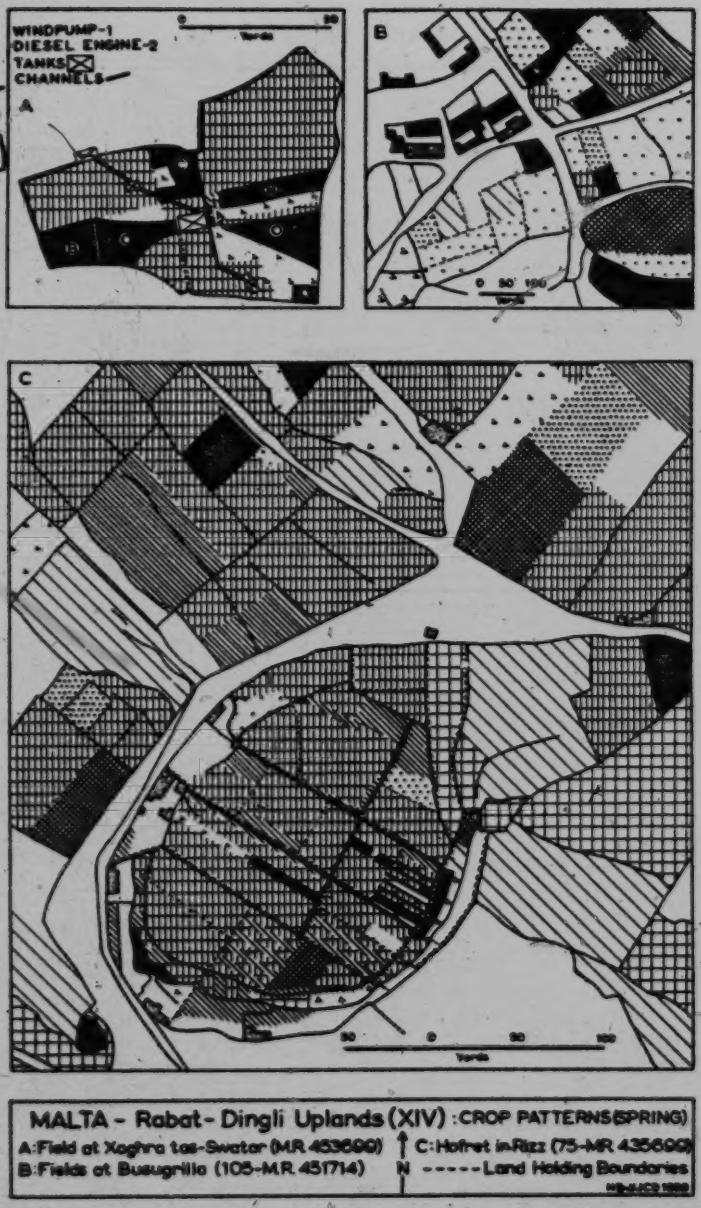
Fig. 110 Malta: Western Rdum Lands.

as, for instance, in the Rdum ta'Dingli (114) (Fig. 108), the cultivation of steep, narrow terraces between formidable cliffs represents a desperate clinging to limited resources. In others, great embayments such as Gnejna (51) (Fig. 109A), l-Imtahleb (63) and Wied ir-Rum (64) (Fig. 109B) offer greater and more easily realised opportunities for specialised farming. In all cases in the *rdum* zone is found a cross-section of the complete geological sequence found in the Islands and this exerts a close control over topography, hydrology, soil-formation and land use. Ideally, and as may be seen at tal-Merhla (62) (Fig. 109C), belts of cultivation lie between the Upper Coralline scarp-cliff and the sheer sea-cliff of the massive Lower Coralline. Zonal differentiation is otherwise controlled by the incidence of springs from the Upper Coralline cap, by differences in gradient and by minor variations between the different beds within the Greensand, Clay and Globigerina series. Although the aspect of the *rdum* lands suggests exposure to strong westerly and south-westerly winds, in fact they often lie in a pocket of calm air below the main airflow which is deflected up and over the *rdum* belt by the high sea cliffs. As evidenced by terrace walls, cultivation has been more extensive in the past. Abandonment is still proceeding and is most rapid in areas which are either most difficult of physical access, e.g. Rdum tal-Vicarju (61), or most remote from settlement, e.g. tar-Raheb (60) ('the place of the hermit').

The most simple type of *rdum* cultivation is exemplified in the narrow sea-facing zone including the Rdum Dun Nazio (80) and the Rdum ta'Dingli (114). Figs. 109C and 110 show the close inter-relationship between geology, slope and cultivation. Three major breaks of slope result from differential erosion. From the Upper Coralline cliff edge (marked A in Fig. 110) a steep cliff falls to a concave slope of gentler gradient on the Blue Clay and Upper Globigerina. Here, on the spring-watered terrace-retained mixed soils, typical *ġnien* crops are found. Below the break of slope B and on the steeper convex slopes of the Middle and Lower Globigerina beds lie a series of abandoned narrower and more inaccessible terraces. Points marked C indicate the line of the upper surface

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

252
*24
*31
●102
423
312



MALTA - Rabat - Dingli Uplands (XIV) : CROP PATTERNS (SPRING)
A: Field at Xaghra tas-Swatar (MR 453690) C: Hofret in-Rizz (75-MR 435690)
B: Fields at Busugrillo (105-MR 451714) N ----- Land Holding Boundaries

Fig. 111 Malta: Rabat-Dingli Uplands.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

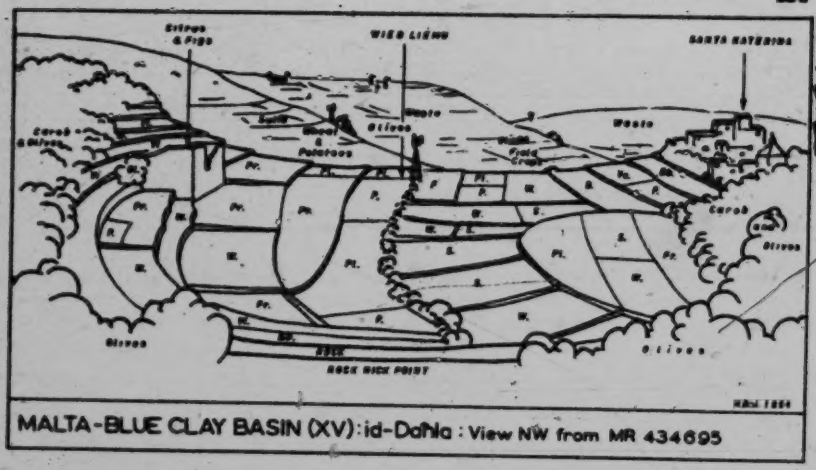


Fig. 112 Malta: Blue Clay Basin: Wied l-Iemu.

has, developed within it, the large solution hollow of Hofret ir-Rizz (75) (Fig. 111C). Bounded by a low Coralline cliff under which lie five farmhouses, and infilled with deep, red soils, this almost circular depression has often been erroneously identified as a circular fault. It is intensively cultivated for potato, vegetable and fruit crops and sub-division of the wind-pump irrigated land is extreme.

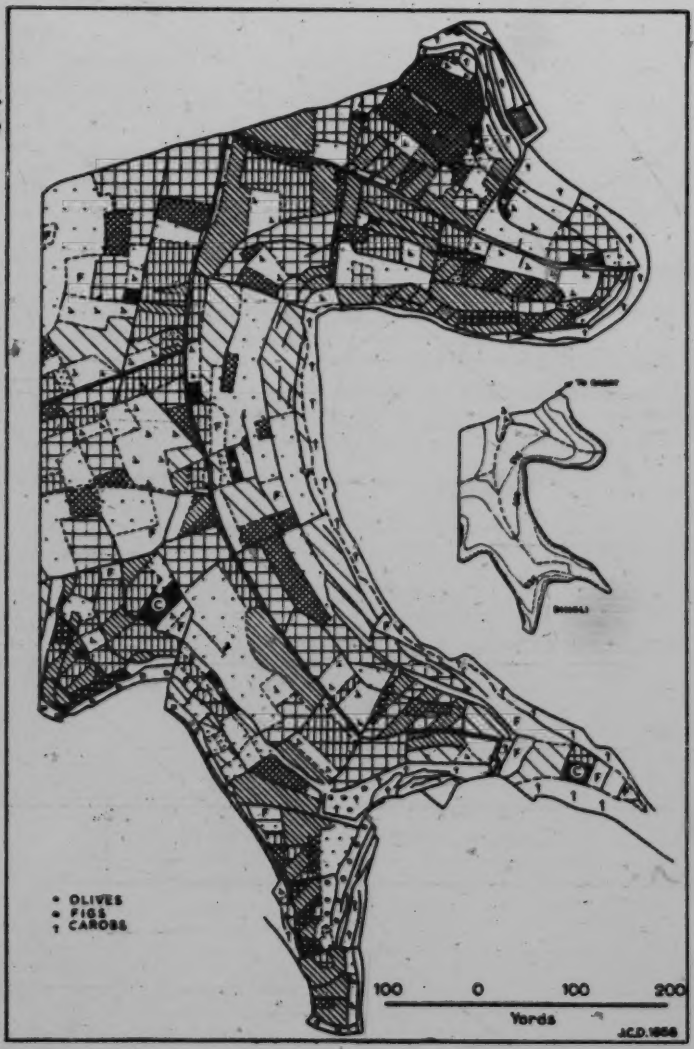
Around Hofret ir-Rizz lie dry-farmed fields of cereals and sulla interspersed with wasteland. The name of neighbouring Misrah tas-Suffara ('the open place of the whistle' - a possible reference to shepherds' pipes) gives an indication of the character of the open, non-irrigated upland here and over the remainder of the region, where dry-farming and *xagħra*-grazing areas are interspersed. Most of the eastern promontories of Xagħra ta l-Isqof (129) and Gebel Ciantar are so used. Similarly, behind the Upper Coralline cliff overlooking the sea, extends an area of virgin karst, abandoned land and some small reclaimed plots.

Between these more exposed lands are many small pockets, intensively cultivated under potatoes, legumes and a relatively large number of vegetables. The small, walled fields cluster around groups of wind-pumps and tanks as at ix-Xagħra ta'Swatar (Fig. 111A) on the Rabat Plateau (109). Irrigation water, extracted by wind- and motor-pumps, is available almost everywhere on these uplands. The density of pumps suggests that extraction is dangerously large (see also Chapter I C). Already in 1955 farmers in the tal-Pitkal district (82) were obliged to stagger periods of pumping and a large number of abandoned wind-pumps emphasise the hydrological instability. In 1956 the Maltese Government, in order to avoid such dangers, imposed a general ban on unlicensed well-drilling.

In this region, the urge to cultivate intensively results from the demands of Rabat as a consuming and marketing centre. At Busugrilla (105) (Fig. 111B) this is manifested in very specialised market-gardening around a flourishing hamlet which stands on the Fiddien road. Well linked by roads to the rest of the island, possessing in Mdina-Rabat the old capital which is still of considerable importance, and also carrying much dispersed and hamlet settlement, these uplands stand out from other Upper Coralline regions by reason of their more intensive land use.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
MALTA

*241
*311
●102
423



MALTA - BLUE CLAY BASIN (XV) Wied I - Iemu (77)
CROP PATTERNS (SPRING) —— Walls ---- Plot Boundaries

Fig. 113 Malta: Blue Clay Basin: id-Dahla.

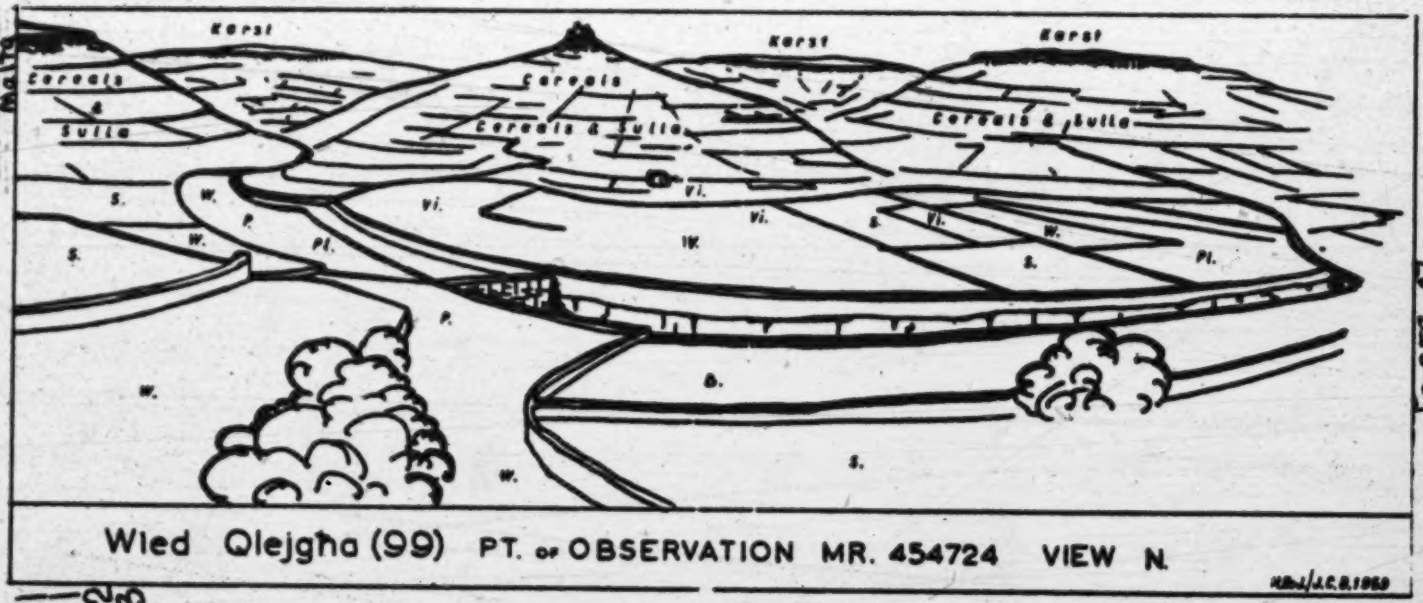


Fig. 114 Malta: Wied Qlejgha.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

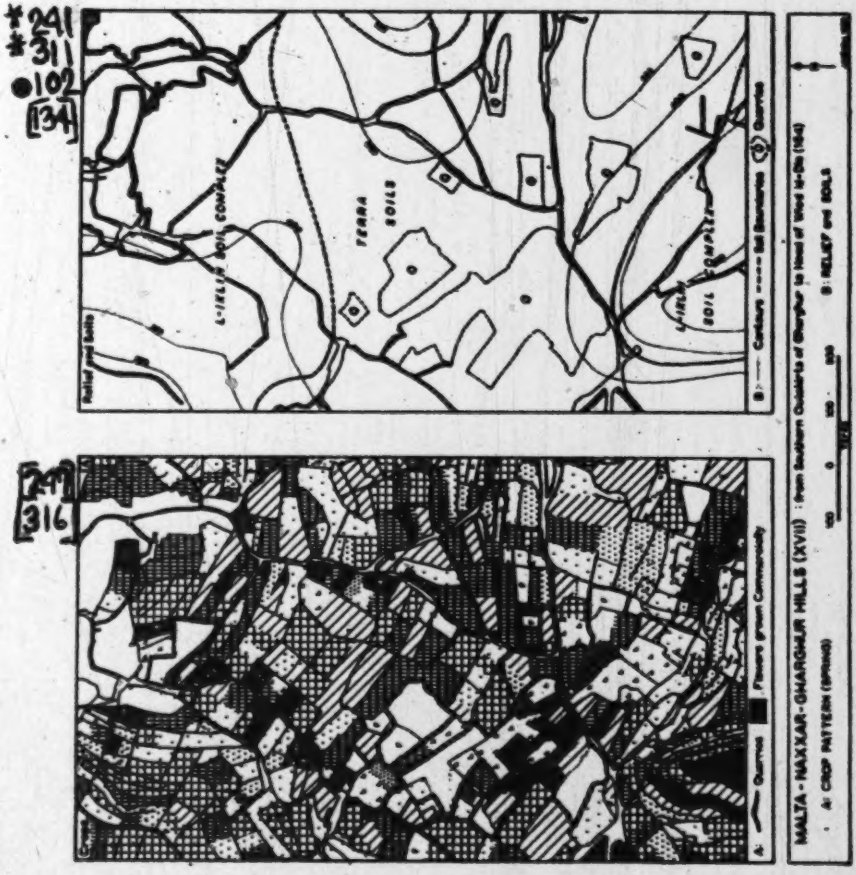


Fig. 115 Malta: Naxxar-Gharghur Hills.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

*241
*311
102

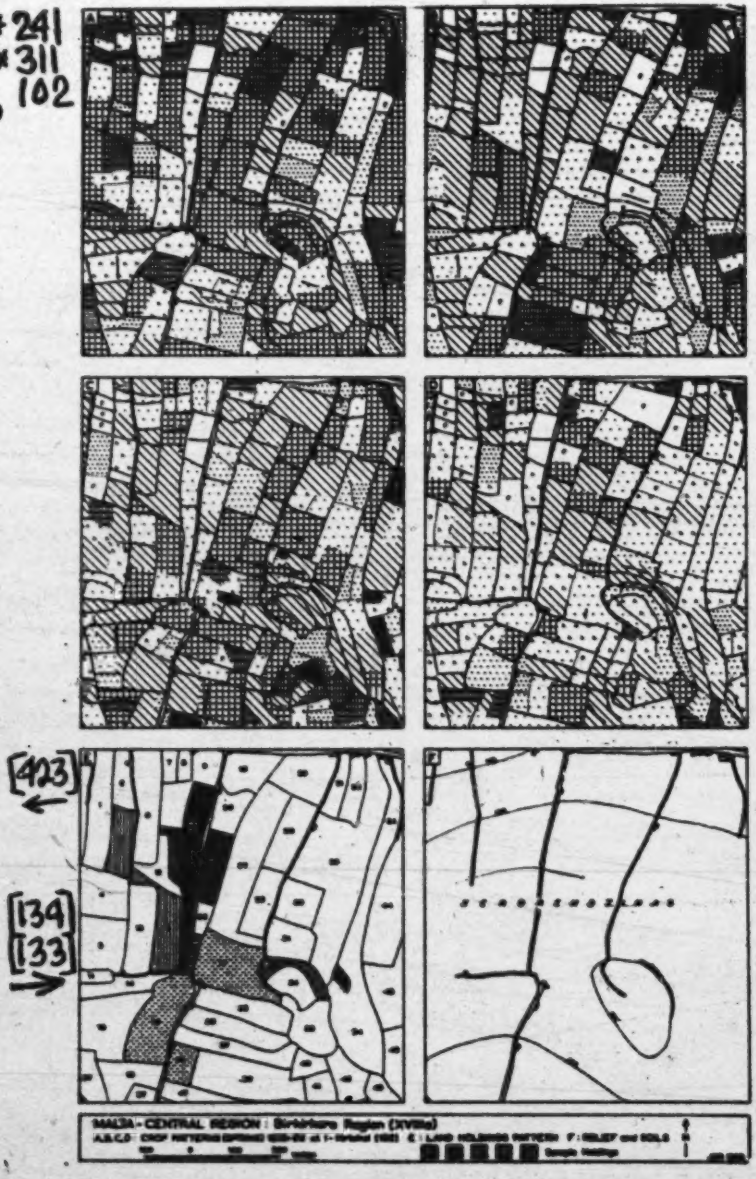


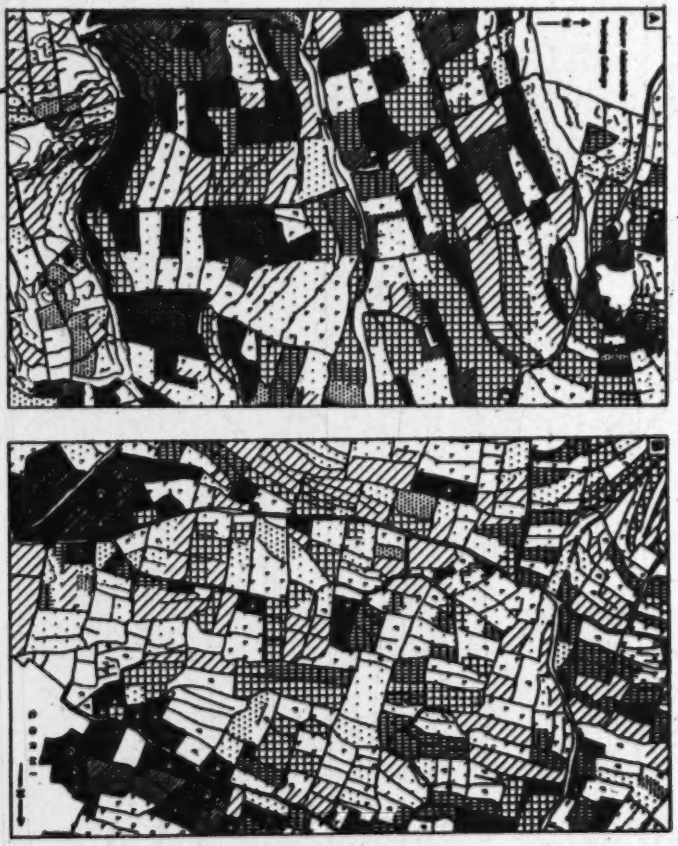
Fig. 116 Malta: Central Region: Birkirkara Region.

1:Bowen-Jones et al K-5 (1955-1958) 1961

EZ6 Malta EZ6

MALTA

*291
*311
102



[p. 262-A]

[See p. 262-B for legend--Analyst]

1:Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

#241
#311
102

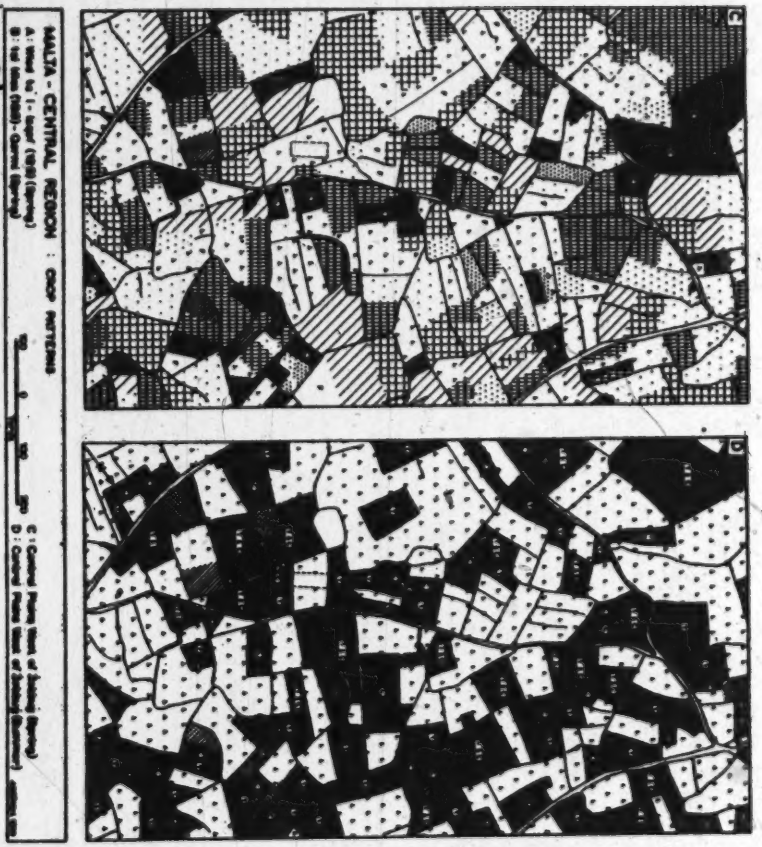


Fig. 117 Malta: Central Region.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

* 241
* 311
• 102

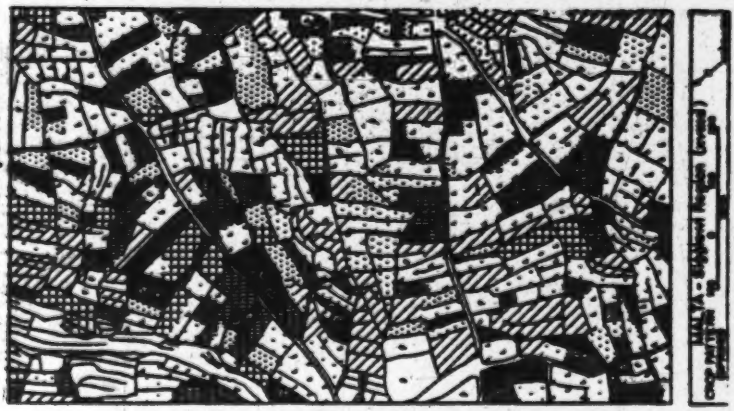


Fig. 119 Malta: Siġġiewi Region.

Fig. 118 Malta: Żebbuġ Region.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

*241
*31
[244]
[102]

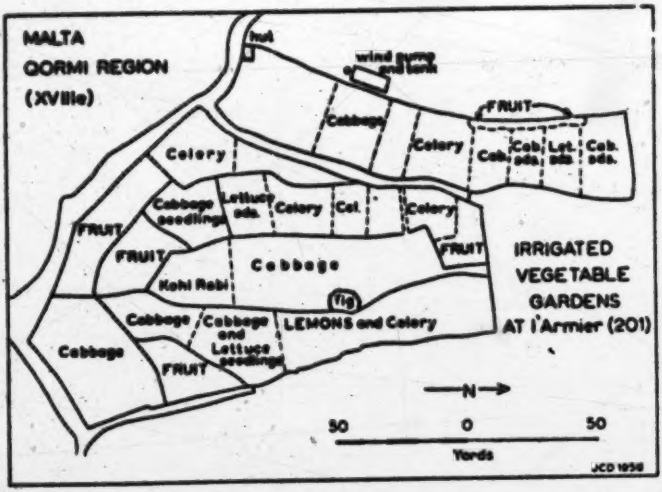


Fig. 120 Malta: Qormi Region.

XIX (a). THE MQABBA - KIRKOP PLAIN

Relatively intensive cultivation of a wide range of crops shows few noteworthy special features. An inverse relationship between the amount of land cultivated for cereals and sulla on the one hand and under potatoes on the other is apparent. The unusually massive concentration of sulla and cereal fields between Mqabba and Żurrieq may be compared with an equally marked concentration on potatoes around Kirkop and Safi. There is otherwise an even scatter of the normal dry-farmed subsidiary crops.

As over the Globigerina lands as a whole, dispersed settlement, while by no means absent, is clearly secondary to concentration in casals and villages.

XIX (b). THE SOUTHERN HILLS

The ridge lands are distinguished from the plain by differences in altitude, exposure, gradient, field size and accessibility. Fig. 121 illustrates some of the contrasts. Nevertheless, the crop range is not markedly different from that of the plains, save that the hardier legumes assume a greater importance. Onion growing would seem to be associated with local markets and with the difficulty of raising other vegetables.

[361] The casals of Qrendi and Żurrieq lie at the junction of these hills with the interior plain. Their functions include marketing and contracting for both sub-regions as well as minor fishing activity. Żurrieq, the larger of the two, has become the chief centre of the region, incorporating within its extended built-up area the satellite villages of Nigret and Bubaqra.

C.XX. THE EASTERN REGION

As described in Chapter I B, this region is one of hill ridges and depressions. Although relief is subdued, there is little level land and relatively minor structural and topographic features have a disproportionately large influence on agriculture. The Main Water Table, which rises but slightly above sea level is nearly everywhere far beneath the surface. The need for dry farming restricts the crop range considerably, even vines being virtually absent. Variations in crop assemblage, which result from a variety of physical and human factors, produce six distinct sub-regions.

[Text continues on p. 269]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

*241
*311
102
[33]
[34]

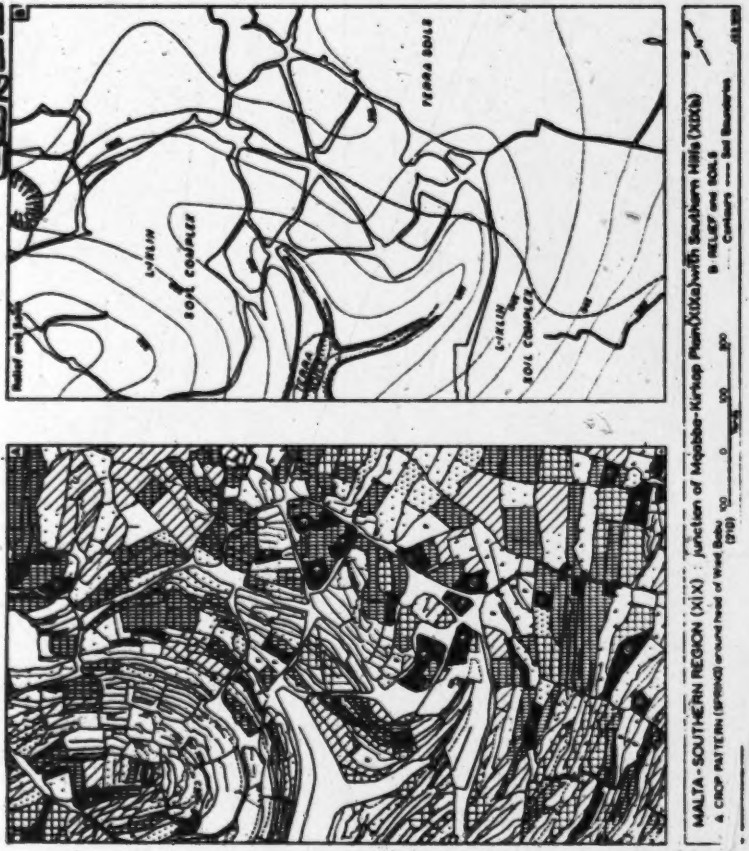


Fig. 121 Malta: Southern Region.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

*241
*311
●102
[33]
[34]
[123]

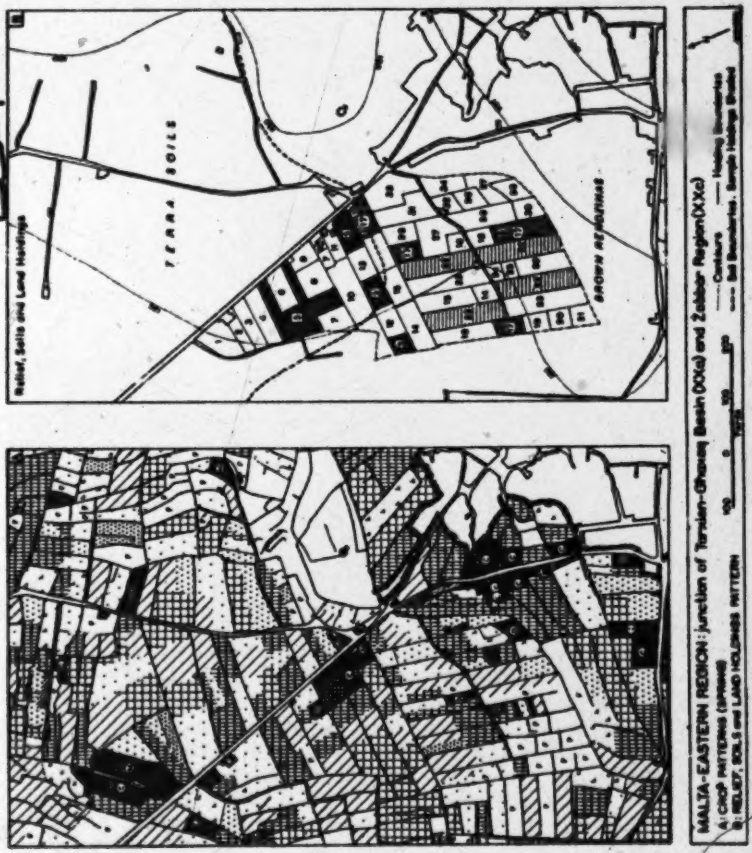


Fig. 123 Malta: Eastern Region: Tarxien-Ghaxaq Basin.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

*241
*311
●102
[133]
[134]

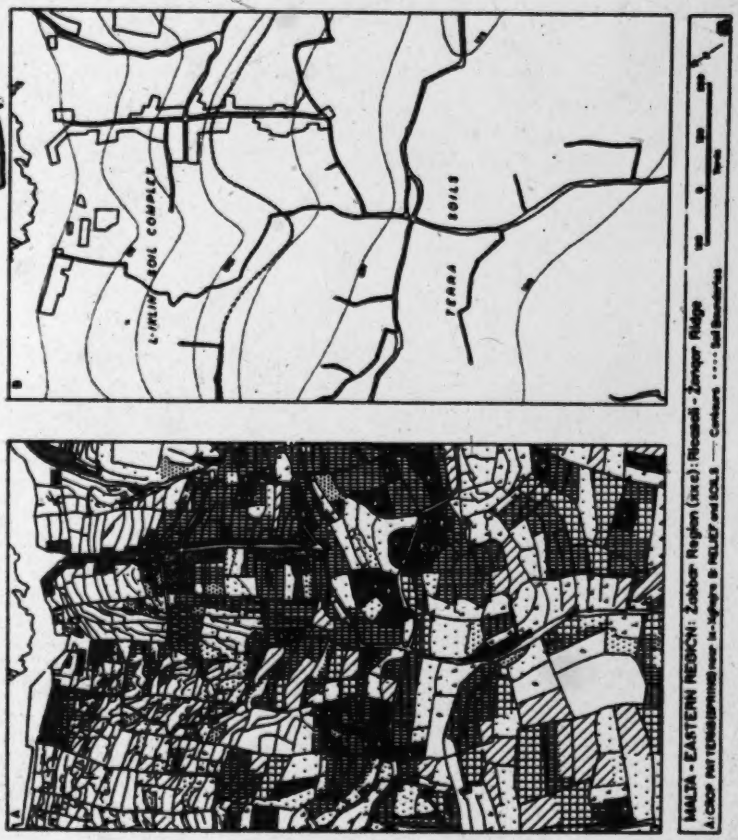
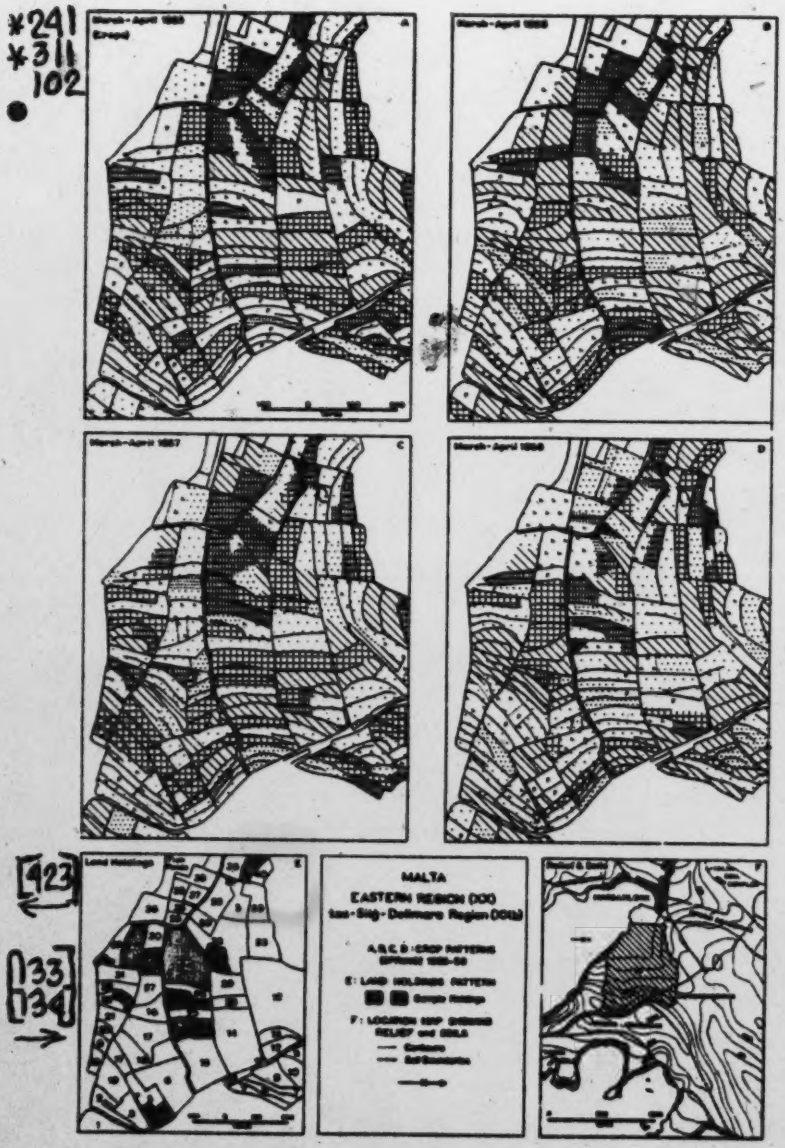


Fig. 121 Malta: Eastern Region: Żabbar Region.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

*241
*311
102



[123]
[133]
[134]

Fig. 134 Malta: Eastern Region: tas-Silġ Delimara.

Dalam, a good deal of this better land has been sterilised by the construction of a large pumping station, but a small pocket of intensive potato-growing occurs before the sea is reached. In the Wied has-Saptan, the transition is marked by a belt of marshy land carrying canes, bullrushes and grasses which are tended and 'cropped'. Below this lies a second small alluvial area also largely under potatoes. This district as a whole possesses a greater variety of physical and land-use conditions than any other in Eastern Malta.

From Qala San Gorg to Benghisa Point, a narrow coastal lowland has been completely taken out of cultivation by settlement growth and by commercial and military installations. The slopes behind this zone are traversed by a series of shallow wieds in which lie narrow strips of wasteland. All dry-farmed crops are represented in this hilly country, even to a few vines grown near the southern coast in a strangely exposed position.

In this small region is exemplified the major problem which besets the Maltese agricultural community and which complicates the patterns of land-use and farming practice in the island. New, well-surfaced roads serve Hal Far and Kalafrana, but between these arteries lies a neglected and relatively remote farming area. Distances involved are small, particularly when the attraction of non-rural life pulls people away from the land. However, as noted elsewhere, the same distances become exaggerated in their effect of isolating the country-dwellers who remain. The dichotomy of town and country is thus perpetuated.

GENERAL

The main facts underlying the regional differentiation of Maltese agriculture may be summarised as follows. While structure and topography control the general distribution of these cropping combinations, important regional differences result from variations in weather and micro-climate. Soil controls, in the main, coincide with those of structure and outcrop, but slope, as affecting removal and accumulation, together with the widespread traditional practice of transporting soil to artificial fields, break up the simple geological pattern.

Farming types in Malta must be identified against a background of socio-economic change. Commercial production is the rule, but considerable variations result from differing degrees of linkage with markets. Socially, this is paralleled by differences in the extent to which rural communities are affected by urban desires and emulations. Proximity to, or remoteness from town life are most important.

Wasteland is spreading most rapidly on the remote and physically hard lands. The flight from the land is slower where it is more productive. General deterioration is most widespread on lands of medium quality where the attraction of town life is strong. On the immediate fringes of the built-up areas, conditions are by no means uniform. While in some cases market gardening provides a particularly intensive form of land use, in others encroachment of roads and buildings produces a jumble of building sites, abandoned fields and a few surviving patches of cultivation. Around the main conurbation as delimited in Fig. 97, lie many pockets of true urban farming. In many of these, as in the case illustrated by Fig. 125, the jostling together of stock-yards and houses and fields, both abandoned and cropped, shows the town triumphant.

Agricultural Regions of Gozo

The physiographic divisions already indicated in Chapter 1 and shown in Fig. 4 are suitable for a regional analysis of agricultural practice in Gozo. Printed maps of Gozo bear few local place-names and thus it has been necessary to devise the special nomenclature used in the present section and illustrated in Fig. 78.

1 [See P. 39-A -- Analyst]
4 [See P. 199 -- Analyst]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Malta

*24
*31
●102
133
134
823

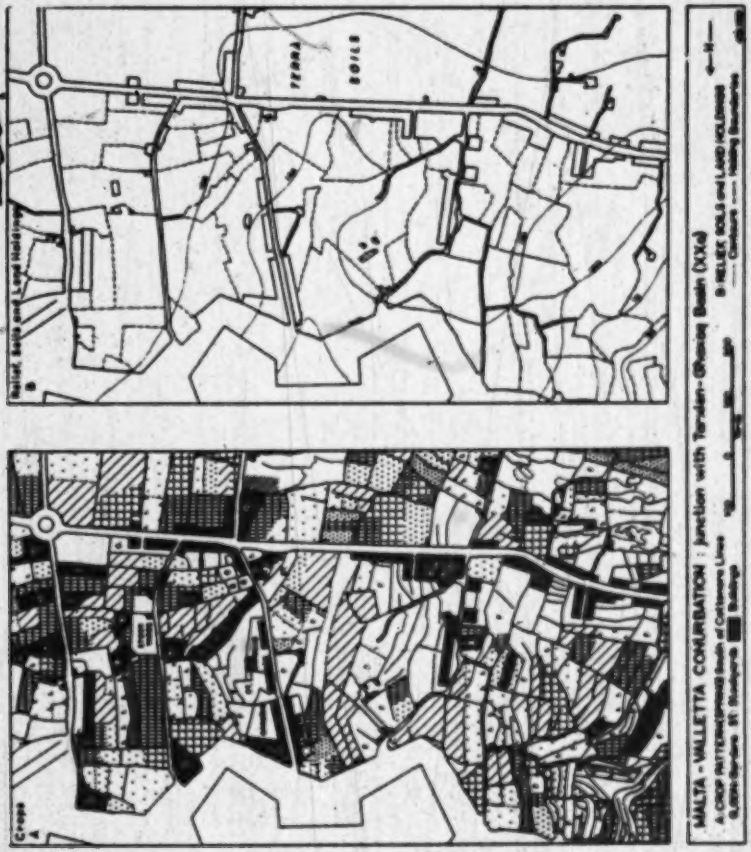


Fig. 128 Malta: Valletta Conurbation.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

*241
*311
102

133
134

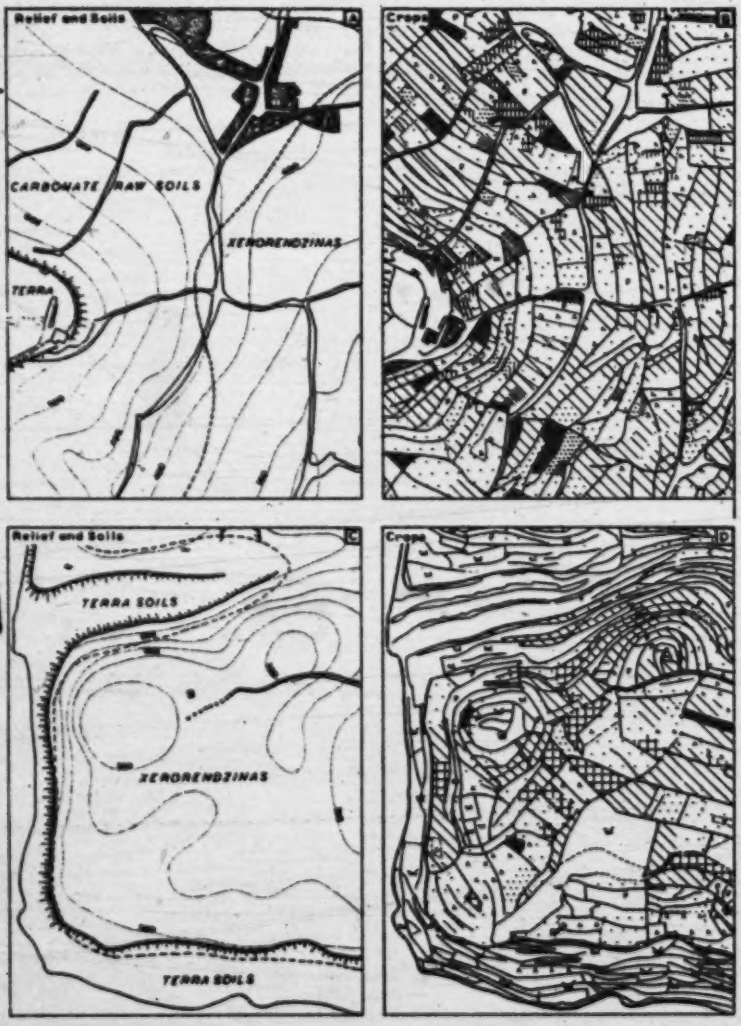


Fig. 126 Gozo: Western Region.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

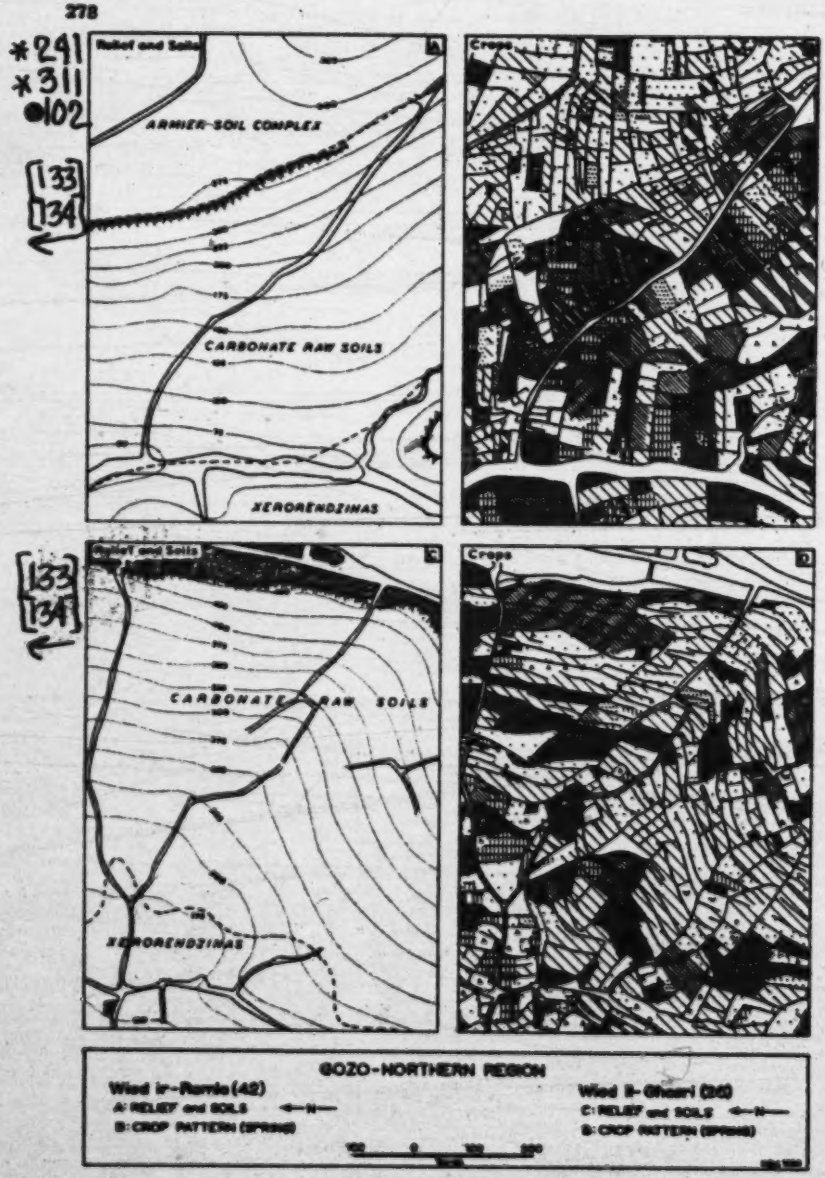
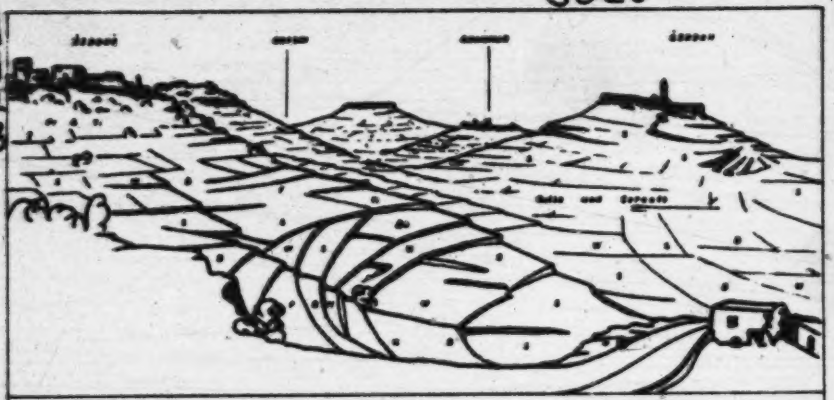
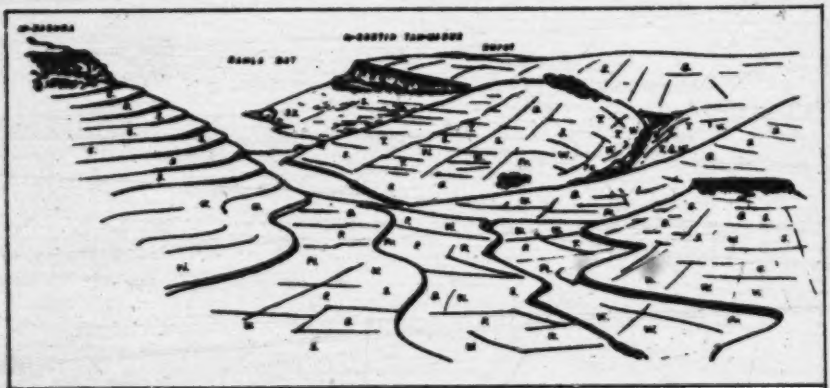


Fig. 127 Gozo: Northern Region.

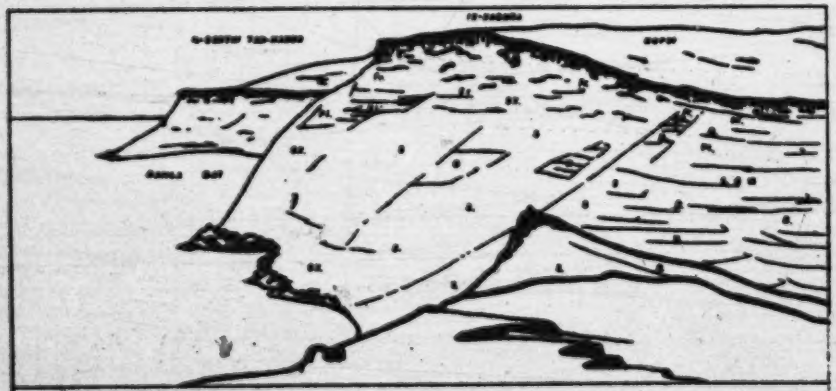
*291
*311
●102
133



A: Wied il-Ghasri (26) PT. OF OBSERVATION M.R. 307930 VIEW S.



B: Wied in-Ramla (42) PT. OF OBSERVATION M.R. 350897 VIEW N.E.



C: Rdum tax-Xaghra (41) PT. OF OBSERVATION M.R. 343915 VIEW S.E.

[p. 280]

Fig. 128 Gozo: Northern Region.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

282

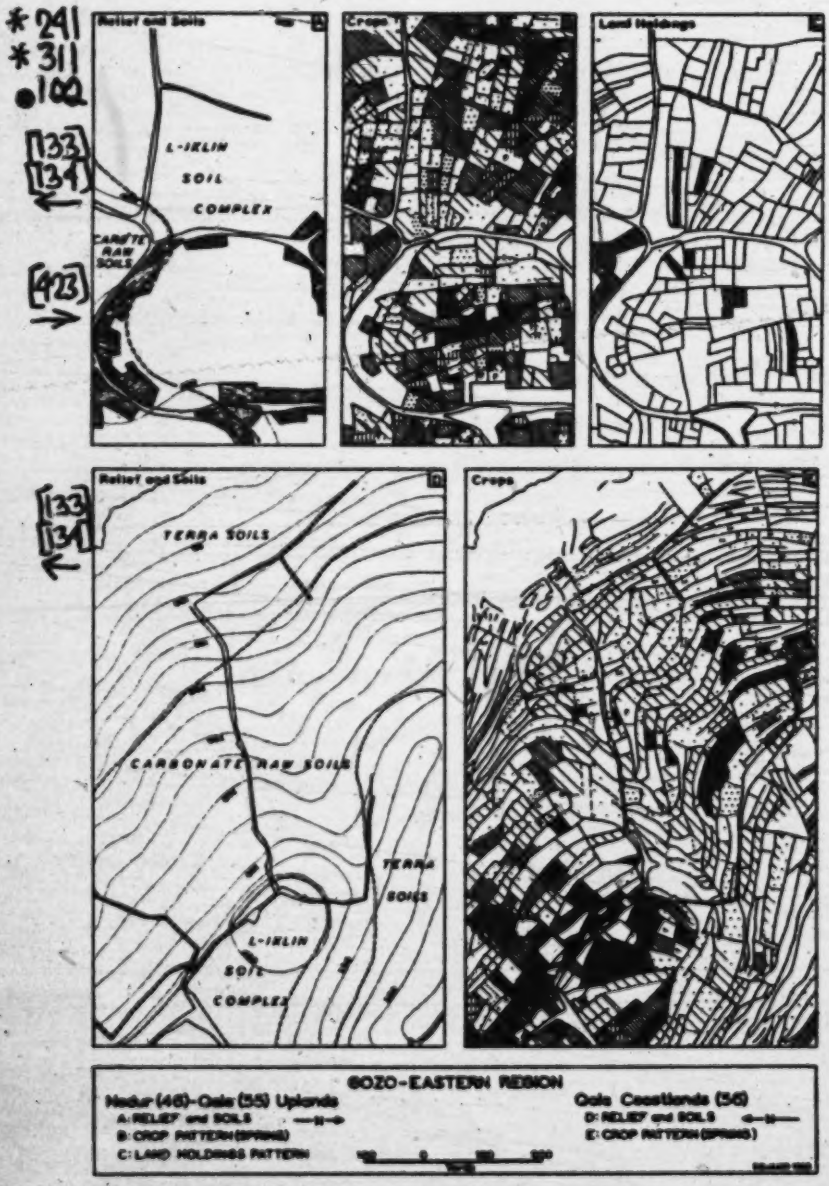
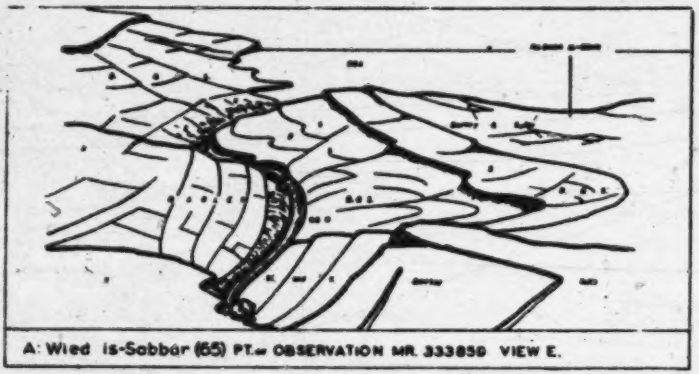


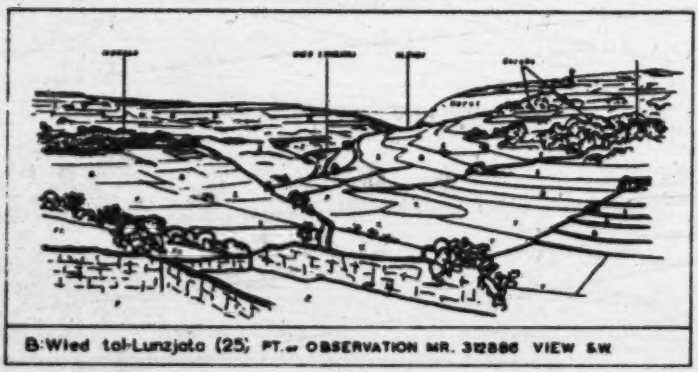
Fig. 129 Gozo: Eastern Region.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

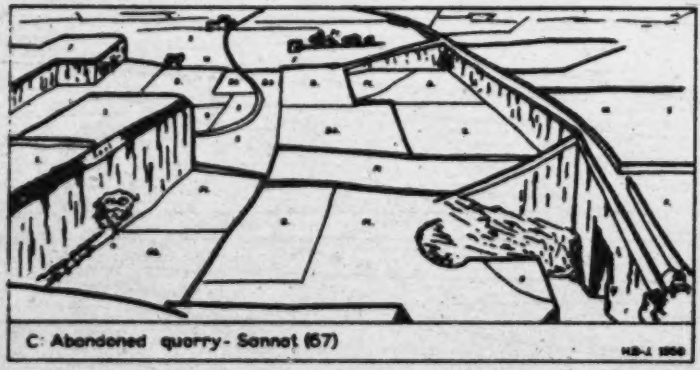
*241
*311
102
133



A: Wied is-Sobbar (65) PT.∞ OBSERVATION NR. 333859 VIEW E.



B: Wied tal-Lunzjata (25) PT.∞ OBSERVATION NR. 312886 VIEW S.W.



C: Abandoned quarry - Sannat (67)

Fig. 130 Gozo: Southern Region.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6
Gozo

241*
311*
102 ●

[133
134]
←

[133
134]
←

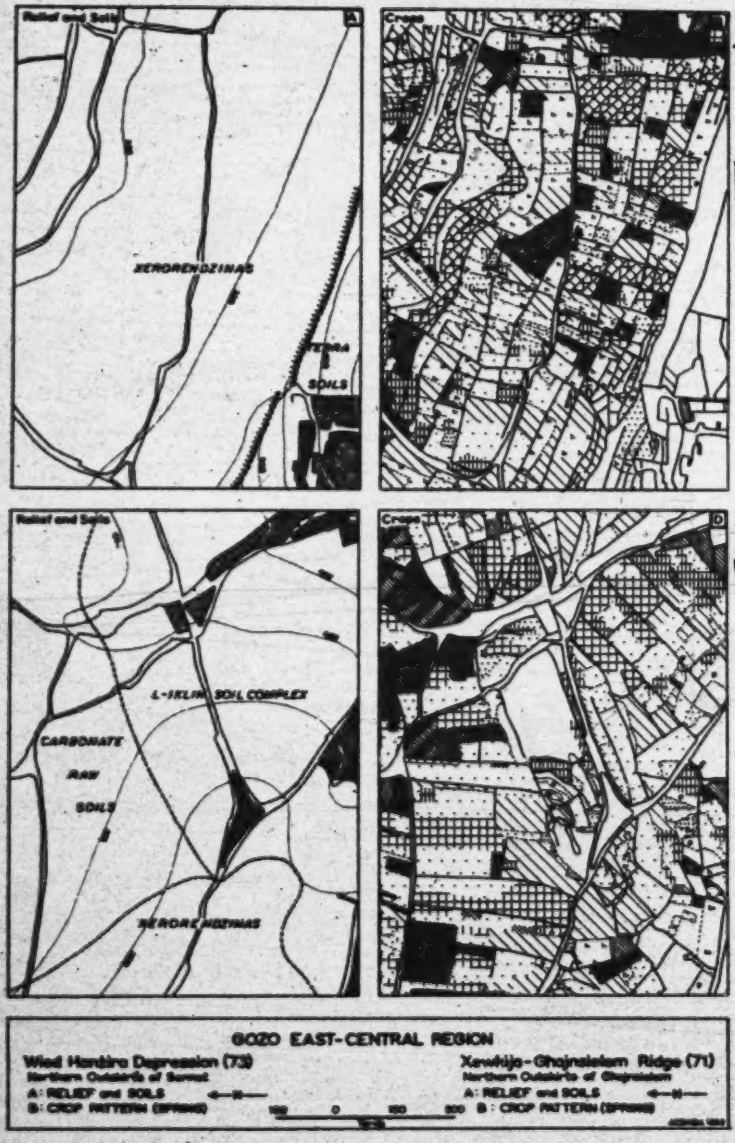


Fig. 131 Gozo: East-Central Region.

Fig. 132 Gozo: East-Central Region: Xewkija-Ghajnsielem Ridge.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

*423
*102
311

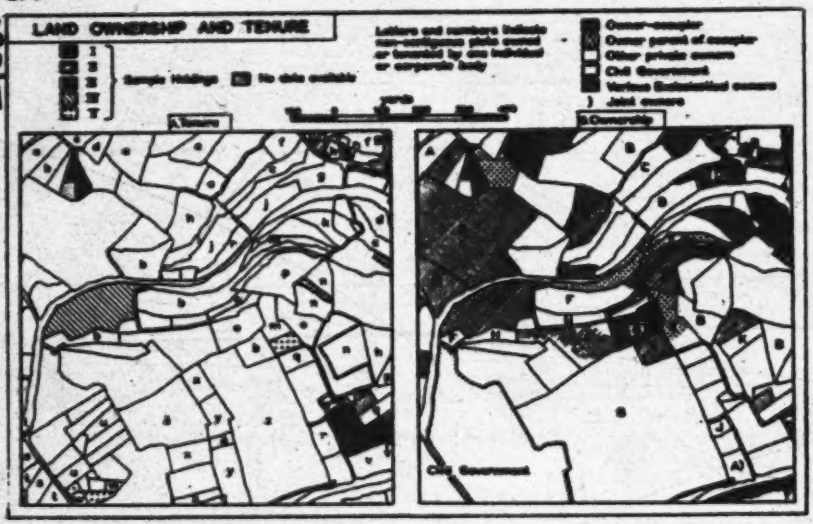


Fig. 135 Land Ownership and Tenure.

*423
311

From data supplied by the Central Office of Statistics, Table 38 has been produced. It shows the proportion of holdings, according to size range which contain only dry and only irrigated land, together with the proportion of holdings containing both; and on a simple areal basis, the predominance of each class of land within the mixed holdings. Table 38, as it stands, gives a valuable indication of the varied character of holdings. The great majority of holdings (83.5 per cent.) are seen to consist of dry land only. A very small proportion, less than half of 1 per cent., contain irrigated land only. The balance of 16 per cent. of all holdings are 'mixed'. The majority of these mixed holdings contain less than 5 *tmien* of irrigated and less than 20 *tmien* of dry land. It is clear that the additional productivity of the irrigated land will not affect a sufficiently large number of holdings, nor to a degree great enough, to upset the earlier conclusion that Maltese farms are extremely small.

The conclusions thus far drawn may now be summarised. Farm holdings of the Maltese Islands show wide variations in size, and their productivity is also very variable since farms consist of different classes of land held in varying proportions. Gozitan farms are smaller than those of the larger island, but everywhere the numbers of large and medium sized farms have been greatly reduced during the past 70 and probably 100 years; the residual holdings are mainly small. Encroachment on farmland by the expanding urban areas, roads and military installations may have been compensated in some degree over the long period by the development of former wastelands. *Morcellement* has been a characteristic internal process affecting the agricultural sector. It appears to have arisen partly through the sub-division of holdings amongst successive generations, but also through the acquisition of land by former landless families. Increasing, but uncertain urban employment has encouraged the growth of much part-time farming, which practice has in turn, contributed to the overall pattern of small holdings.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

*423 102 311 [133] [489]

This small agricultural entity, the Maltese Farm, is further split into a number of non-contiguous plots or parcels, each of no great size. In illustration of this and other related points a small area in Malta, square in shape with a side half a mile long, has been examined in some detail (Fig. 135). The area lies in the Central Region, between Siġġiewi and Żebbuġ, and includes in its north-eastern corner, part of the latter settlement. It is dissected by two steep-sided valleys, that of the Wied il-Beqqiegħa crossing from south-west to north-east, and the Wied il-Ħesri which appears in the south-east corner. Narrow, terraced fields follow the contours of the valley sides but, on the more rounded relief of the interfluve, the fields, although still terraced, become generally larger and more nearly square in shape. Apart from the valley-floors, used as foot- and cart-ways, with other accommodation roads and paths, non-agricultural lands are limited to a few house-sites in the outskirts of Żebbuġ. A few scattered patches of rock outcrop occur on the steeper slopes, but the only large patch of uncultivated land covers the north-eastern lobe of the large tenancy plot lying south of the area shaded black in map. The remaining land is devoted to dry farming crops characteristic of the region.

LAND TENURE (Fig. 135A)

The underlying topography, clearly influences the shape, and, to a lesser extent the size of the tenurial plots. This is most striking in the north-eastern quadrant, where long, narrow plots reflect the sinuous terraces of the Wied il-Beqqiegħa; on the slopes of the Wied il-Ħesri, however, the relationship is scarcely apparent. Shallower gradients are covered by plots of fuller and more varied shape differing greatly in size. In the north-east corner small and oddly shaped tenancy parcels are clearly related to the nearby settlements and are mainly specialised garden plots. An anomalous area of small plots in the opposite corner breaks up the general tendency of increasing size away from the casal.

Tenancy units are small in size, but there is enormous variation. The average of the parcels shown here, including parts of parcels beyond the limits of the area mapped, is slightly less than 5 *tmien*. The smallest garden plot (*b*, north-east corner) contains about one-twentieth of a *tmien* of land, while the large plot of fieldland in the south (*z*) is about 50 *tmien* in extent. There may be a tendency for plots to be larger in areas where soils are thin and poor, but the two distributions can certainly not be equated.

Of the 129 plots, parts of which lie within the half mile square, 57 are held by farmers with no other land in the area. But the remaining 29 holdings each have two or more non-contiguous parcels. This relationship is indicated by the use of distinctive shading in the case of Sample Holdings II and V, and otherwise by the letter *a* to *z* and *d*. Holding *b* (six plots) scattered throughout the northern two-thirds of the area is an extreme example of the typical parcellation.

*423 102

LAND OWNERSHIP (Fig. 135B)

In general terms, within the area shown here, the distributions of ownership and of tenure are similar. As shown in Fig. 135B, there are many scattered plots belonging to the same owner, a characteristic which might be termed fragmented ownership. A similar cartographical convention to that used in Fig. 135A is adopted here. Plots owned by the same private owner are indicated by the letters A-J (I is excluded); the numbers 1-4 are used similarly for the various classes of ecclesiastical ownership. All plots, whether duplicated or not, belonging to the latter class, which includes monastic, episcopal, and parish land, as well as land owned by Charitable Institutions (a very small proportion in this area), are distinguished by a special system of shading as also are Civil Government lands. The rather special cases of ownership by the occupier or by his parent are also distinguished from the bulk of the parcels which are owned by other private persons.

Looking at the distribution in its basic form, as a simple pattern of parcels, ignoring the various special relationships, several points emerge. As in the map of tenure, there is a complex network, but the weave is generally coarser,

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

423*
102

the plots larger in size. The average ownership/plot is 7.33 *imien*, and although the smallest is still one-twentieth of a *tomna*, the largest is now over 100 *imien*. Thus the landscape can be considered as a series of four webs, the mesh of which becomes progressively smaller. The two larger are illustrated here: ownership parcels and tenancy plots. Next in magnitude is the field pattern, shown in detail on the standard 6-inch and 25-inch maps, and finally the crop-stand pattern with its very small units, amply illustrated in other sections of this book. But the alignments of these various sub-divisions are by no means constant from the smaller to the next larger. For example, some of the boundaries of the tenancy plots run across the middle of fields; similarly a parcel held by one tenant may be owned by more than one landlord. Nevertheless, in any given area, as here, the various patterns show clear evidence of their family relationship and the tendency for plots to decrease in size with proximity to the settlement is more clearly defined in the map of land ownership than in that of tenure.

Common ownership of several plots adds complexity. The owner of plots B is clearly the largest landowner although his plots are widely scattered. Next in order of magnitude, if it be considered as one ownership, is Ecclesiastical land. The Church lands are interesting, by virtue of the contrast between the large blocks owned by the monasteries (3 and 4), and the scattered episcopal (2) and parochial (1) lands. Owner-occupied and family-occupied land is concentrated to the north-east, where the relative ease of access from and to Żebbuġ has been a factor in the acquisition of freehold land. This same tendency has been observed during field investigation in many other parts of the islands.

How far does the pattern of ownership influence the detailed structure of farm holdings? The difficulty of answering such a question is illustrated by a comparison of Fig. A with Fig. B. The greatest dissimilarity of the two distributions is occasioned by the division into small tenancy plots of the Government-owned land of the south-west. But, apart from Sample V, it is noteworthy that holders of land in this sector have no other land within the area. The conclusion is that these are portions of an original holding, which has been sub-divided. However, tenancy holdings are by no means limited to one ownership holding. A striking example of such non-conformity is afforded by tenancy holding *b*, consisting of six tenancy plots. These six plots have seven separate owners, including the farmer as owner-occupier of the small garden plot (north-east corner). One plot (that immediately south of sample holding IV, centre-west) is owned by three persons. Is this an indication of an attempt to consolidate a holding? - or has contiguity merely enabled the tenant to know of an ensuing vacancy so that he could speak for the new tenancy in advance of any competitors?

Special attention is given in Fig. 135B to owner-occupiers, and occupiers of land owned by their parent. Tent *m*'s holdings within the area are limited to land owned by his father's heirs *E*, while a portion of this ownership is occupied by sample holding V. This case comes nearest to contradicting the generalisation that none of those owner-occupiers having more than one plot in the area own land occupied by other farmers; on the other hand each has land leased from another owner, and that those with but a single plot in the area are tenants in other parts of the region.

Close examination of the two maps will reveal further illustrations of these complex inter-relations.

The principal points arising from an examination of this case-study may be listed as follows:-

(1) The tenurial plot is very variable in size, but averages some 5½ *imien* in area.

(2) The shape, size and distribution of the plots making up the tenurial pattern is influenced by all, but not controlled by any of the following factors: relief, soils, land management, field shape and size and ownership.

(3) Descriptively, farm holdings and land property may both be held to be fragmented.

(4) Tenurial holdings display a complex and extremely varied range of relationships with various estates.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6
Malta

*423
102

[p. 298-A]

Fig. 138 Fragmented Farm Holdings.

1: Bowen-Jones et al. K-5 (1955-1958) 1961

EZ6 Malta EZ6

Malta

423*
102

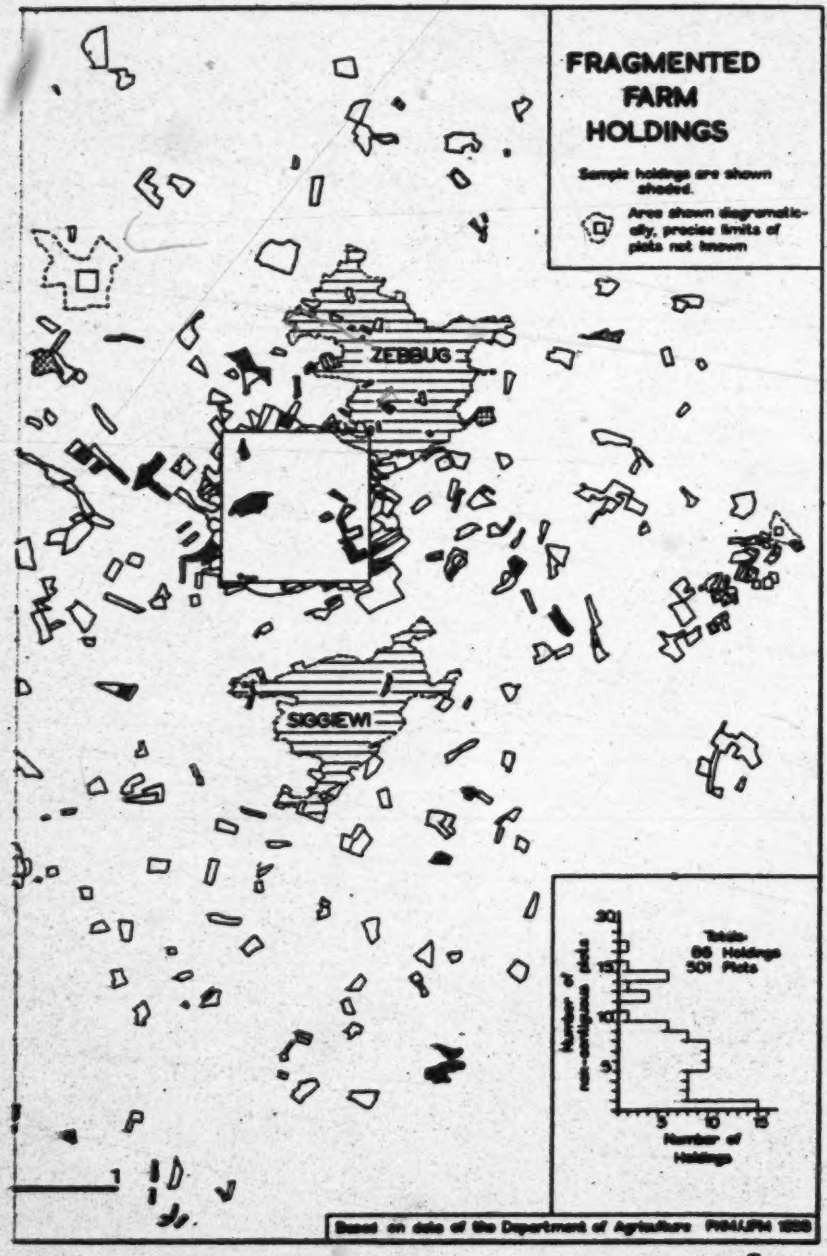


Fig. 138 Fragmented Farm Holdings.

[p. 298-B]

*423
●102

(5) So far as existing patterns can be self-explanatory, it would appear that farm holdings are composed of scattered plots by virtue of several processes; the splitting up of single holdings among several tenants, the letting to a single tenant of parts of a fragmented estate and by the collection under an individual's control of a number of entirely separate plots of land.

However, Fig. 135 does not fully explore the degree to which parts of holdings are scattered, since many plots may lie well outside the half mile square. That this is so to a considerable degree is demonstrated by Fig. 136.

In the centre is shown the area represented by Fig. 135. All those farm holdings, having plots or parts of plots within this smaller square are shown in full. Including the 129 plots of Fig. 135, 501 non-contiguous plots farmed by 86 separate agriculturalists are represented. In those cases where the Farm Register Map is incomplete and the sub-divisions of larger tracts are not yet fully known, the outline of these tracts is marked, containing a symbolic plot proportional to the area held within that tract. 501 should therefore be regarded

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

as a slight under-estimate of the number of plots concerned.

Geographically, the holdings spread over a large area, circular in shape, with a diameter of some 4 miles. The half-mile square is excentric to this distribution, whose spread is greatest towards the coast, in a south-westerly direction. However, there is also a considerable thinning out in this direction, and the maximum number of plots cluster about an east-west axis cutting through the square. Within this belt, and to the north, plots tend to be somewhat larger than to the south. 423* 102

All these plots are farmed by people who live either in Żebbuġ or Siġġiewi; 31 of them in the latter. The built-up areas of these casals and also that of Rabat-Mdina are shown. In the north-west, many of the Żebbuġ-Siġġiewi holdings encroach on the parish territory of Rabat, while a broad belt of inter-mixture of Żebbuġ and Siġġiewi holdings follows the inter-parochial boundary. In terms of farm holdings, parochial limits have only a very general validity, and it seems unlikely that the parishes have possessed any real economic integrity for a considerable period, if ever. The maintenance of parish units during the various agricultural censuses has presented analysts with many problems, but it is extremely difficult to see what other small units could be adopted.

Five of the holdings of Fig. 135 are given distinctive shading, and plots belonging to these are also particularised in Fig. 136, where a key makes identification possible. As it appears, fragmentation is an exceedingly difficult thing to measure with precision, since it is a function of the area of the holding, the number of the constituent parts and their relative isolation. Sample holding V, for example, consists of 17 separate plots and a direct line between the furthest plots is almost 2½ miles long. That this sample is unexceptional can be judged by the geographical scatter, and from the diagram appended to Fig. 136 which relates the number of holdings to the number of separate plots within each holding. Apart from single-plot holdings, of which the majority are small in size and held by part-time cultivators, more than half consist of six or more plots, and the average for all holdings is between five and six non-contiguous plots.

In the course of this examination, an assessment has been made of the extent to which farms may be described as fragmented. It is often suggested that *parcellement*, as a process, is partially responsible for this characteristic. However, in order to assess the degree of importance of the various processes, an historical perspective would be most valuable. It has therefore proved necessary to follow a long trail of field enquiry in order to build up the case-history which closes this chapter. 423*

Before discussing this material, however, it would be advisable to comment briefly on the validity of conclusions based on the above example, upon certain causes which are constantly invoked as full and adequate explanations of the scattered character of holdings, and upon the Laws which lie behind the present Maltese agricultural systems.

Within the complex processes of the development of farmholdings, the element of ownership must obviously play an important part. Unfortunately the translation of source-material into statistical and cartographic forms is by no means easy. The Farm Register is the only official source for cartographic representation and, until the proposed Cadastral Survey is complete, will with all its faults remain the main analytical tool. Few areas are completely registered and, even in these, the true ownership of land has not always been ascertained. The area already considered, that lying between Żebbuġ and Siġġiewi, is less affected than most by such deficiencies. 423* 129

Differentiation between the main classes of ownership is of basic importance. Some classes of Church and Government lands have had sufficient historical continuity of ownership to allow one to ignore effects of sub-division by legacy. Owner-occupied farms on the other hand are more prone to such *parcellement*. On the economic plane, differences in the level of rents demanded by various classes of owner can also have a considerable influence on farm morphology. 423*

1:Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

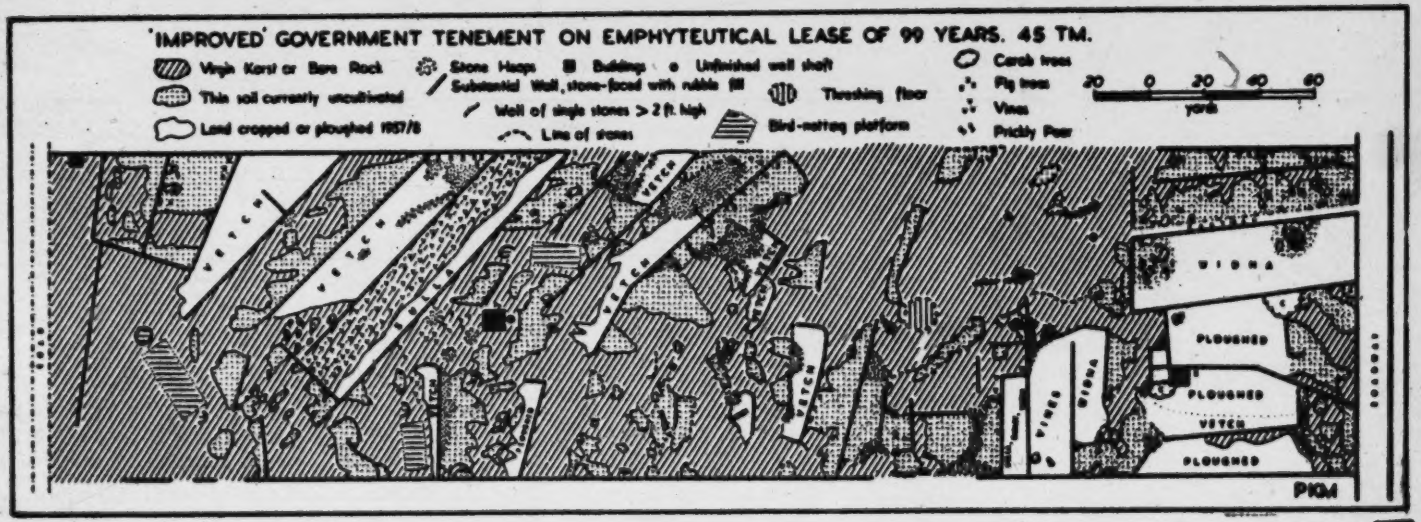


Fig. 137 Improved Government Tenement on Emphyteutical Lease of 99 years.

*423
•102
311

[p.302-A]

423*
102●
311

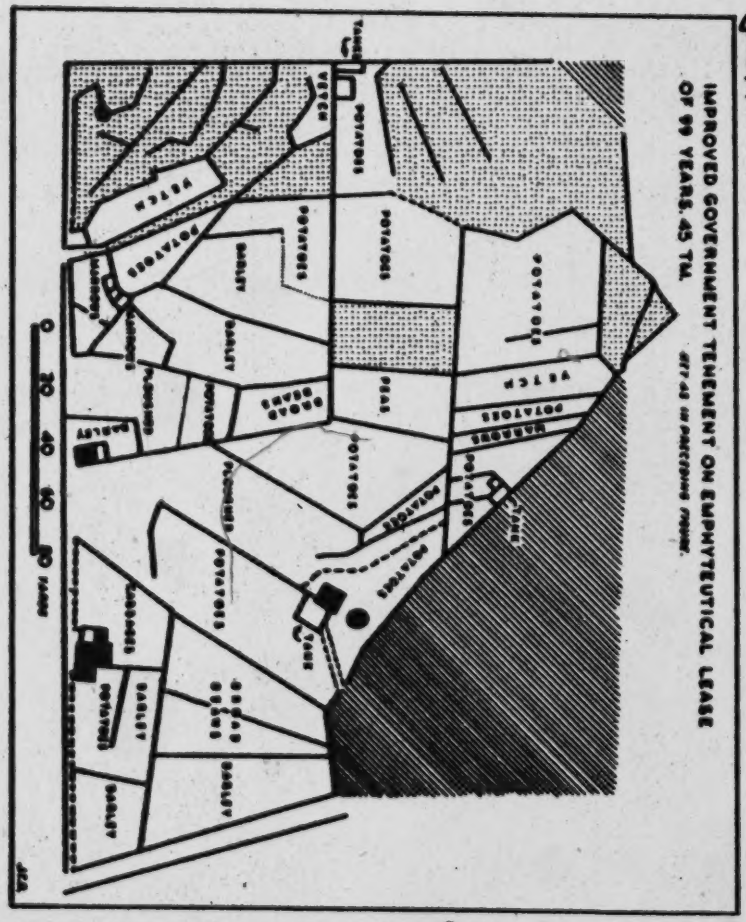


Fig. 138 Improved Government Tenement on Emphyteutical Lease of 99 years (second example).

[p. 302-B]

[For key see page 302-A]

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

Table 41. Estimated percentages of total agricultural land owned by various groups. c. 1950.

	Civil Govt.	War Depts.	Church, etc.	Landlord	Farmer's Family	Farmer	Total
Malta	16	1	22	51	2	8	100
Gozo	23		13	54	2	9	100
Both Islands	19		19	52	2	8	100

be properly worked. This argument as a basis for encouraging owner-occupance must be treated with some suspicion. All the field evidence goes to show that, in recent years, land purchases by working farmers have been mainly of good and, if possible, irrigated land. The Maltese agriculturalist rarely makes a conscious assessment of his returns in terms of productivity of labour or capital but rather the emphasis is placed on gross production. Nevertheless, general productivity, security of harvest and even social status all make him buy the best land, even at inflated prices. Little of such freehold property is difficult to work and little of it therefore lies 'waste'.

Historically there is further proof that the incentive of ownership is on its own of no great importance in increasing the proportion of worked land in any holding. Early nineteenth century writers both commented on the large areas of rock and other wasteland in the North of Malta, and on the age-old practice of building 'artificial fields' (see p. 324). There was a widespread belief that the whole of the cultivated land had been created in this way and that further extension was mainly a matter of encouraging the farmers to undertake the labour involved. A Commission of the *Società Economico Agraria* considered the question and made in their report of 1848 (3) the following points. First, any increase in agricultural production, particularly of grains, would be welcome. Secondly, there existed a pool of grossly under-employed labour and capital. Thirdly, although the physical extension of the cultivated area would be a slow process, the national advantage would be great. Fourthly, this end could be achieved by the granting of land in perpetual emphyteusis so that capital and labour could be securely applied to reclamation. In 1855 Schembri supported such a policy (4).

From 1850 onwards, much barren Crown land was distributed on this basis, frequently in parcels of 16 *tmien* and on 99-year emphyteutical leases. Subject to improvement (a clause that does not appear to have been enforced), the tenant had complete security of a tenure which could be renewed by his heirs on a preferential basis at low rents. During the first period rents could be as low as 1½d. per *tomna*.

Although some land was improved, the project as a whole was not a great success. Economic and social changes can be held responsible for some of the lack of response to these offers, for the second half of the nineteenth century was a dynamic period. In spite of much Crown expenditure on the laying out and construction of access roads, and the building of many field and terrace walls, some land was never taken up and more remained economically marginal. Of the leased land, a considerable proportion was later abandoned.

The main factor making for local success or failure of the scheme was the availability or otherwise of water. Two contrasting examples illustrate this point. Fig. 137 shows an area of 16 *tmien* in the hands of one tenant. Small patches of vetch are the sole evidence of use. Figs and vines planted during early development no longer bear fruit. This long-lease land is virtually waste. The other example, illustrated in Fig. 138, has similar terrain and is more exposed to wind and seaspray. Here the presence of a shallow water-body has provided an incentive for the slow development of a soil cover and enabled intensive cultivation to succeed. Twenty-two heirs of the original lessee have each insisted on their right to work a portion of the holding.

1:Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

Fig. 139 The Landholdings of a Maltese Family

[p. 308-A]

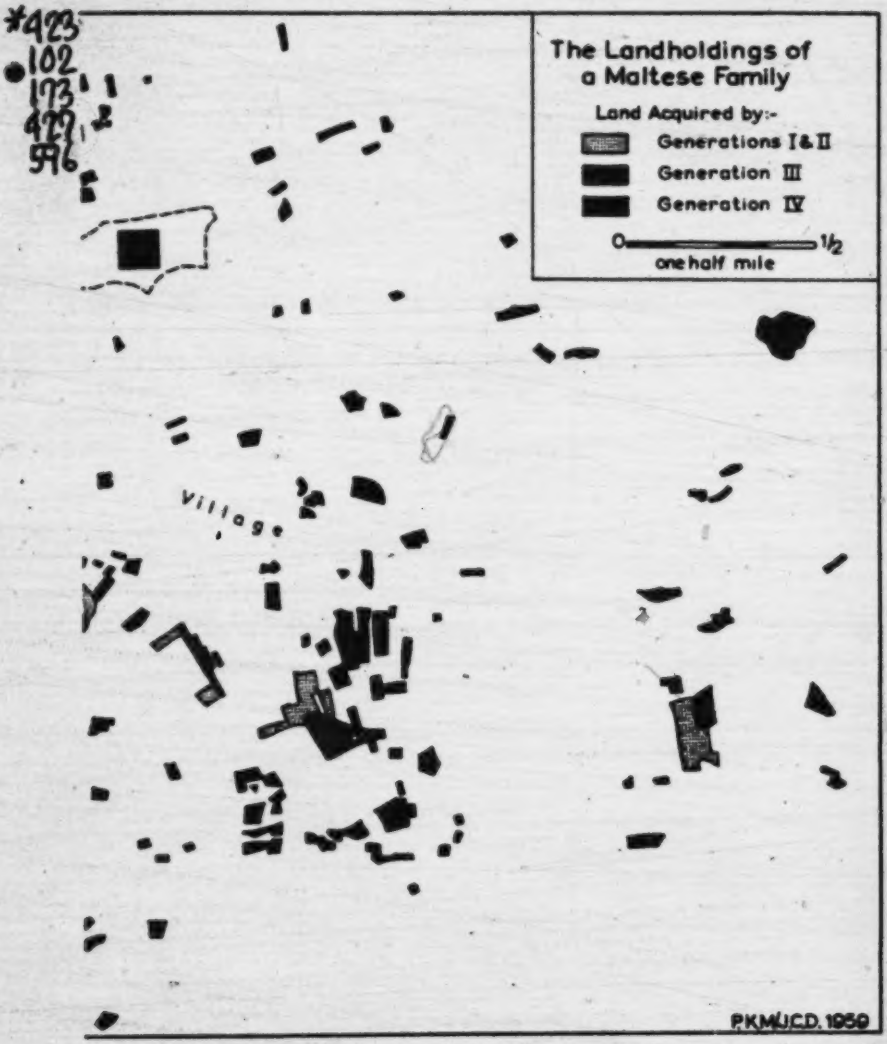


Fig. 139
The Landholdings of a Maltese Family.

[p. 308-B]

absence of land hunger at this period, 1895 to 1896. Such a situation had probably existed for some years, since there is no information that other land taken over as a new tenancy, again by 5, at the beginning of that decade was 'lying idle' at the expiration of a long lease. The area concerned was again substantial and 5, unable or unwilling to tackle the whole plot, joined with two brothers from a nearby hamlet in making a successful bid for the tenement. The land, and also the rent which they had jointly agreed to pay, was then sub-divided, local conditions of soil and quality being taken into consideration.

At some time, possibly during this period, the other brothers, 2 and 3, added to the land obtained by marriage at Ghajn Tuffieha (as a new tenancy and with strangers as co-tenants) another 35 *tmien* some two miles to the south-east, close to what is now the parish boundary in that direction. At a later date (c. 1910) 2 and his son, 21, entered on a new tenement of irrigated land in the Wied tal-Pwales to the north of Ghajn Tuffieha. This was immediately divided into two approximately equal portions, of which the father's was eventually shared only amongst his other children.

The land initially acquired by 2 (the founder of group B) from his wife's family was Government land, which was already at that date split into a number of separate plots, but the other lands acquired by this second generation as new tenancies were fairly large blocks of land, averaging 36 *tmien* in area, including the two 4-*tmien* plots of land leased to 5.

It is clear, therefore, that during the 50 years before 1910 quite large blocks of land in northern Malta were coming on to the leasehold market, and that a family without previous rights of any sort in that land could enter on to it, apply sufficient capital and industry to maintain its hold and, within limits, dictate the amount of rent which it was willing to pay for the use of that land. All the land leased for the first time during this period belonged to owners of large private or ecclesiastical estates and some at least had been surrendered on the termination of long leases. There is strong evidence from all branches of the family that all land leased during this period has stayed within the group, though some naturally has passed to daughters on their marriage. The land acquired in the male line by 0 and 2-5 in this early period is mapped at Fig. 139.

This area mapped in Fig. 139 totals 262 *tmien* and was held by the four brothers in the proportions shown in Table 42.

Table 42. Maximum holdings of generation II. *Tmien*.

	Sons of Farmer 0				
	Son 2 (B)	Son 3 (C)	Son 4 (D)	Son 5 (E)	Total
Acquired by marriage	12½	7½	-	-	19½
New tenancies	21½	42½	36½	121½	242½
Total leasehold	34	49½	36½	121½	262
Freehold	-	-	-	-	-
Total area	34	49½	36½	121½	262
No. of non-contiguous plots	?	?	6	8	?

Even at this early stage, there is considerable disparity in the size of holdings, though this would partly disappear if the relative proportions of irrigated and waste land were taken into account. None of the brothers had any significant financial interests outside farming. 2 and 3 seem to have lived at Ġnejna Ghajn Tuffieha but the others remained at Mosta, though many week-nights were spent in rooms which they had in a building at the head of the Ġnejna valley.

1: Bowen-Jones et al. K-5 (1955-1958) 1961
EZ6 Malta EZ6

Notes on Two Land-Holding Patterns

*423
102

Fig. 104F[1] provides an example of extreme sub-division of the land in an intensely cultivated area, where irrigation water is readily available. The map covers some 324 *tmiem* (80 acres) and is divided into no less than 323 plots, separated from each other by stone walls, by tenancy boundaries or by both. The tenancies of 259 of these plots have been identified from the maps of the Land Register and these are worked by 69 individual tenants. Forty-six tenants, working 194 plots, are registered in the parish of St. Paul's Bay, 15, working 48 plots, belong to Mġarr and 8, with 19 plots, to Mellieħa. The distribution of plots among the tenants is as follows:-

Number of plots per tenant	Number of tenants	Total number of plots
1	29	29
2	9	18
3	4	12
4	8	32
5	3	15
6	3	18
7	0	0
8	4	32
9	1	9
10	4	40
11	0	0
12	1	12
13	0	0
14	3	42
	69	259

Fig. 116E[2] illustrates a tenancy pattern in complete contrast to that of Fig. 104F. In this dry-farmed area, plots are much larger, averaging 3.7 *tmiem* (approx. 1 acre), compared with 1 *tomna* in the Wied tal-Pwales sample. Individual tenants generally work a number of adjacent fields and sub-division of fields is extremely rare. The area involved in this case, is approximately 414 *tmiem* (115 acres) divided into 112 plots worked by 50 tenants. The land lies wholly in the parishes of Attard and Qormi, the boundary running north-south along the central track, but the farmers are registered in a number of neighbouring parishes:-

Parish	Tenants	Plots
Attard	7	13
Balzan	12	3
Birkirkara	16	35
Hamrun	2	3
Lija	1	1
Msida	1	1
Qormi	31	56
	50	112

This distribution indicates the deficiencies involved in statistics collected on a parish basis.

The distribution of plots is as follows:-

Number of plots per tenant	Number of tenants	Total number of plots
1	24	24
2	10	20
3	7	21
4	3	12
5	3	15
6	2	12
7	0	0
8	1	8
	50	112

[1] [See p. 282 -- Analyst]
[2] [See p. 260 -- Analyst]

238

102
241

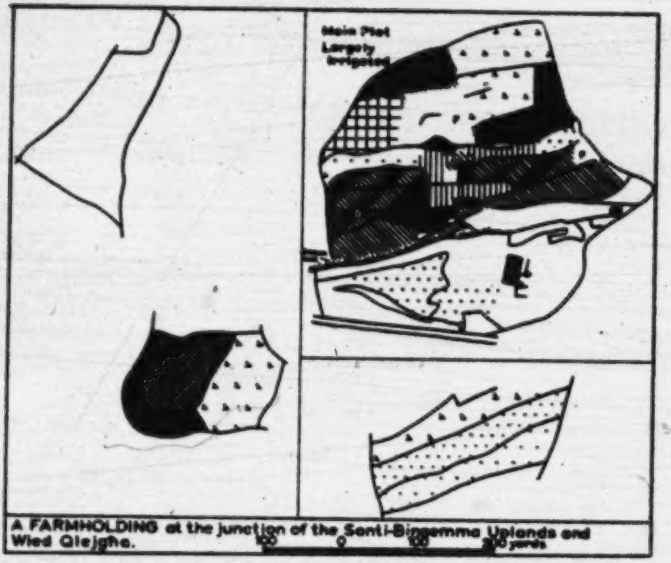


Fig. 141 A farmholding at the junction of the Santi-Binġemma Uplands and Wied Qlejgha.

241
312 Upper Coralline aquifers overlying outcropping Blue Clay. The main supply, from a fissured Coralline cave now piped into a cistern, has only failed once (1950) since 1921. Water needs conserving in summer and is then only applied to special crops. Minor supplies come from 'wet weather' springs on Blue Clay slope.

134
241 Soils - deep, weathered marls with thin clay beds, these latter being used for marling the Upper Coralline lands. In winter, the clay beds are too wet for most crops; e.g. during the 1953-54 season an attempt to grow wheat failed completely and, on 2nd April, 1955, drainage holes were necessary to hasten the percolation of surplus water in some fields. In summer, the clays need careful tilling in order to avoid caking. Produce is mainly for sale in Rabat market.

241 3. THE FULL-TIME DRYLAND ARABLE FARMER

This group is numerically and areally the most important. It also tends to set the general standard of farming.

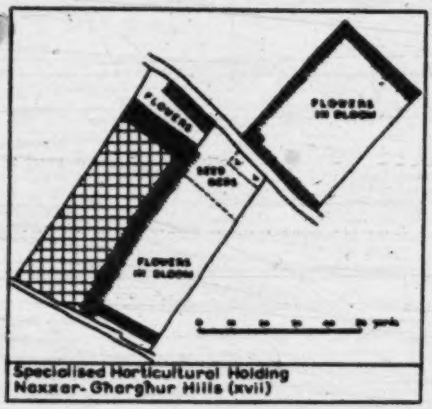
E - The first example of this group works land in Region CXX, the Tarxien-Ghaxaq Basin. A full-time farmer with two dependants with a fairly concentrated holding of 32 *tmiem* (8.7 acres), used as follows in spring:-

3.6	*tmiem* of Sulla
5	*tmiem* of Potatoes
5	*tmiem* of Wheat
5	*tmiem* of Barley
.5	*tmiem* of Broad Beans (vegetable)
19.1	

The remainder is under onions, aniseed, cumin, fallow and forages. The best land has 30 inches of soil and is rented at 36s. per *tmuma*. The poorer

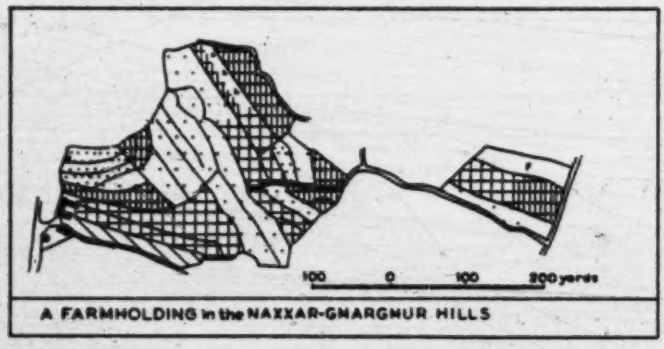
340

102
241



Specialised Horticultural Holding
Naxxar-Gharghur Hills (xvii)

Fig. 142 Specialised Horticultural Holding in the Naxxar-Gharghur Hills.



A FARMHOLDING in the NAXXAR-GHARGHUR HILLS

Fig. 143 A Farmholding in the Naxxar-Gharghur Hills.

241 by the cultivator for his wife who inherited control from her family. The remaining two-thirds of the land is held from several landlords in various customary partnership arrangements. On these field plots, very variable in quality, a typical land use pattern would be as follows:-

1½ plots, c. 3 *tmien*, under vines.
2 plots of six terraces, c. one-half rocky waste, one-quarter vetches and barley, one-quarter wheat and beans.
2 plots, c. 4 *tmien*, under wheat followed by melons.
¼ plot intercultivated potatoes and melons.
½ plots, c. 2 tmien, under *filbiema* (black peas).

This farmer, like many of his kind, obtains the greatest single return from *tmien* fruit farming and, although with very limited livestock interests, devotes much acreage to leguminous rotational fodder crops to be sold either by the field or by harvested volume. Working livestock is owned by the farmer and about half the land periodically worked by hired machinery. Produce is sold mainly through middlemen - the *pilhali*.

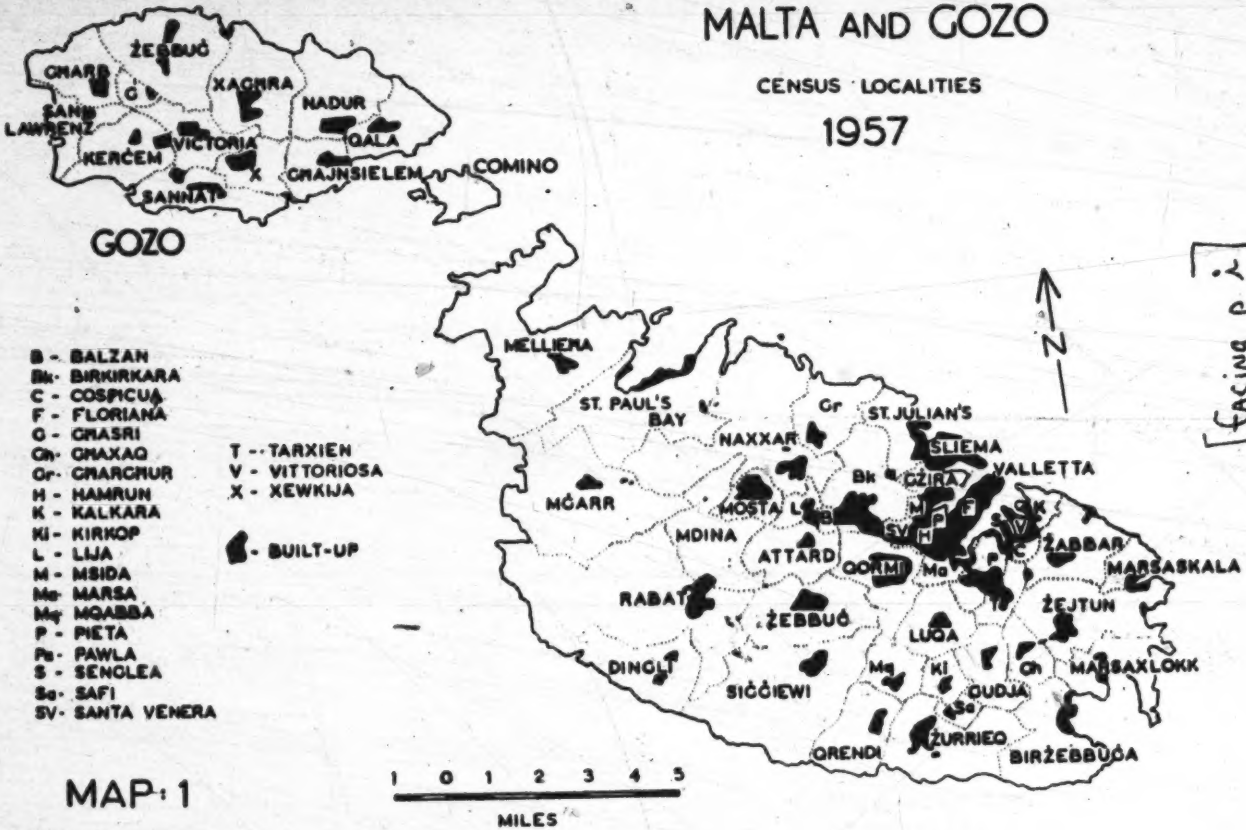
• 102
103
481
487
131
311

MALTA AND GOZO

MALTA AND GOZO

CENSUS LOCALITIES

1957



B - BALZAN
Bk - BIRKIRKARA
C - COSPICUA
F - FLORIANA
G - GHASRI
Gh - GHAXAQ
Gr - GHARGHUR
H - HAMRUN
K - KALKARA
Ki - KIRKOP
L - LIJA
M - MSIDA
Ma - MARSA
Mq - MQABBA
P - PIETA
Pa - PAWLA
S - SENGLEA
Sa - SAFI
SV - SANTA VENERA

T - TARXIEN
V - VITTORIOSA
X - XEWKIJA

- BUILT-UP

MAP: 1

[facing p i]

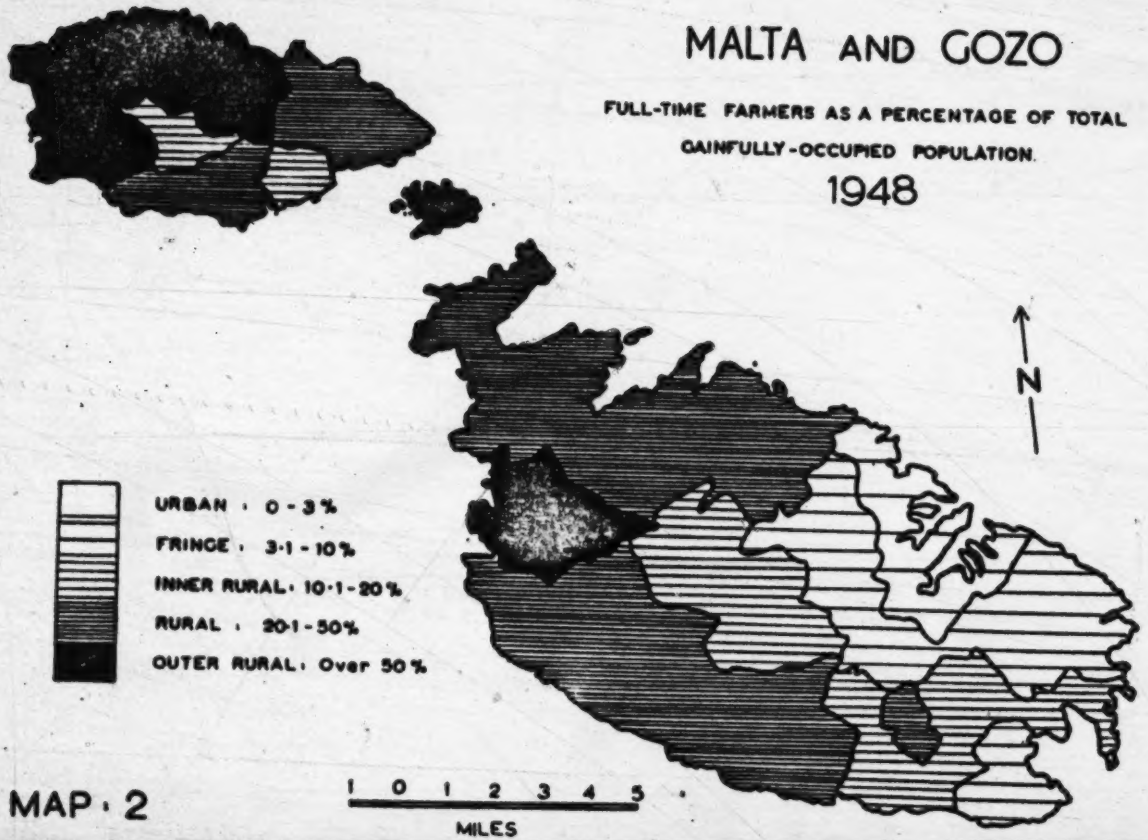
[frontispiece]

6: Beeley K-5 (1957-1958) 1959 EZ6 Malta EZ6

102
103

6: Beeley K-5 (1957-1958) 1959 EZ6 Malta EZ6

102
463
162



MAP : 2

[Following p. viii]

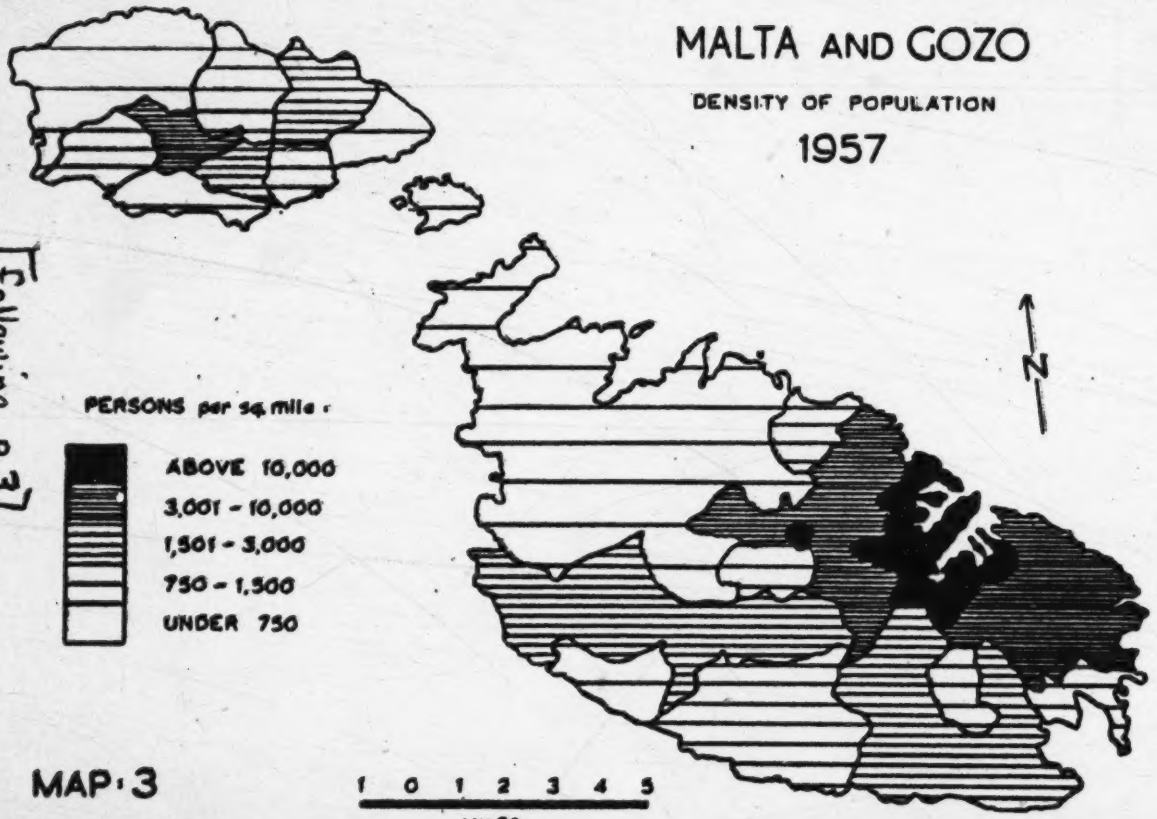
•102
161

6. Beeley K-5 (1957-1958) 1959 EZ6 Malta EZ6

MALTA AND GOZO

DENSITY OF POPULATION

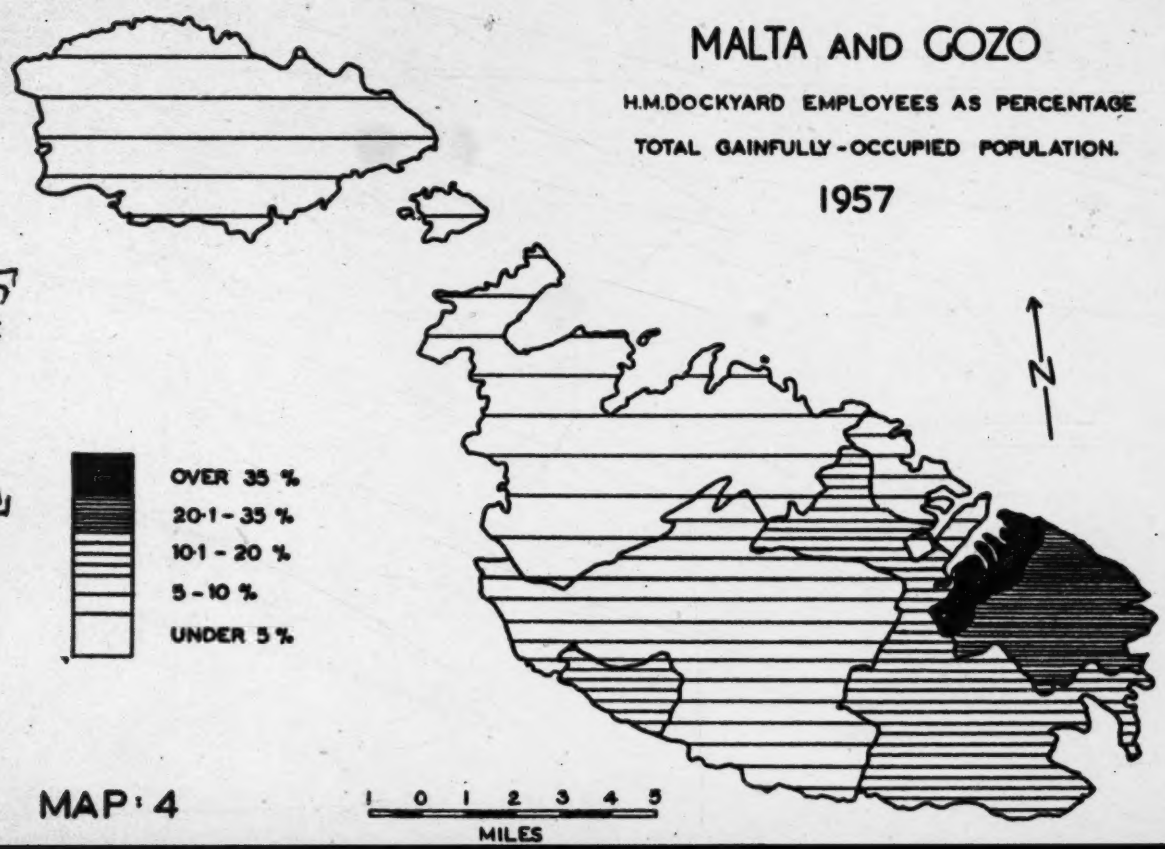
1957



[Following p 3]

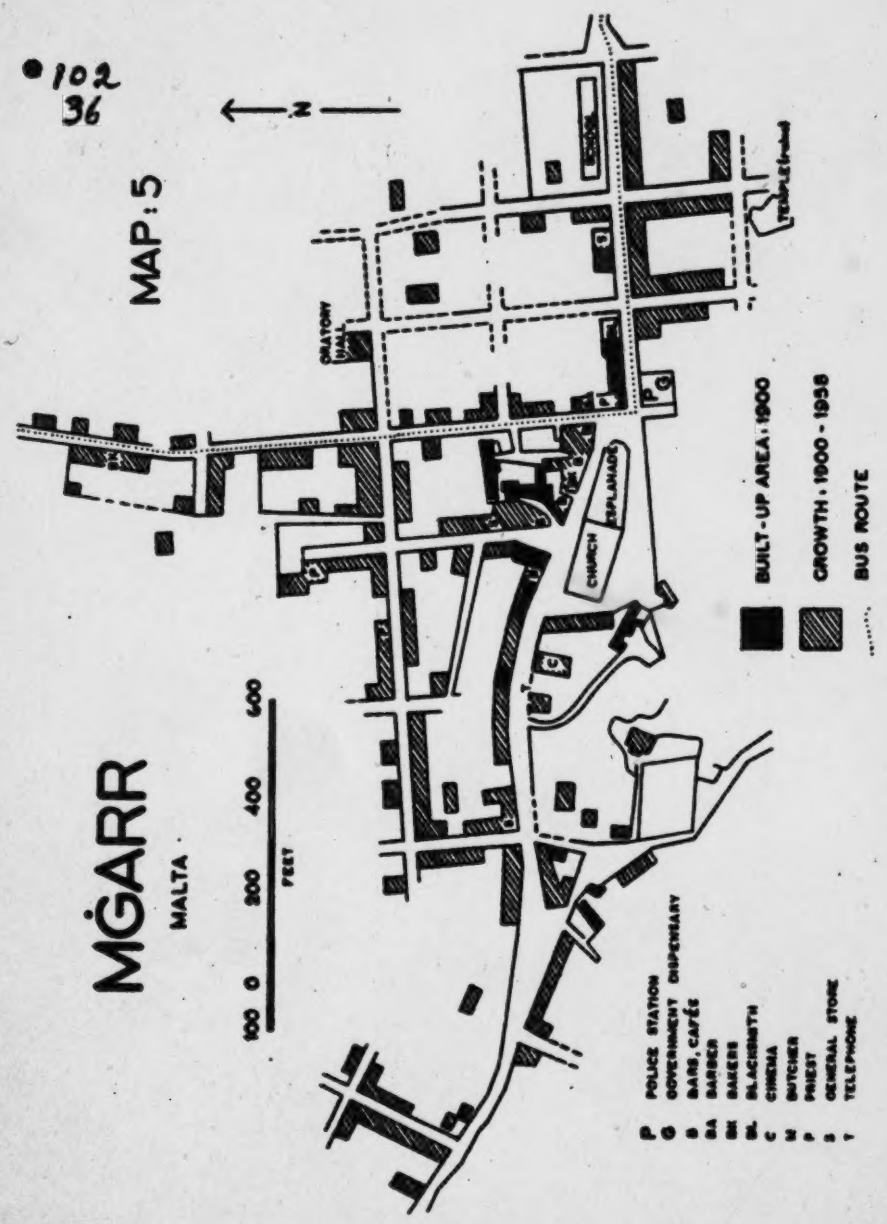
MAP: 3

•102
463
162



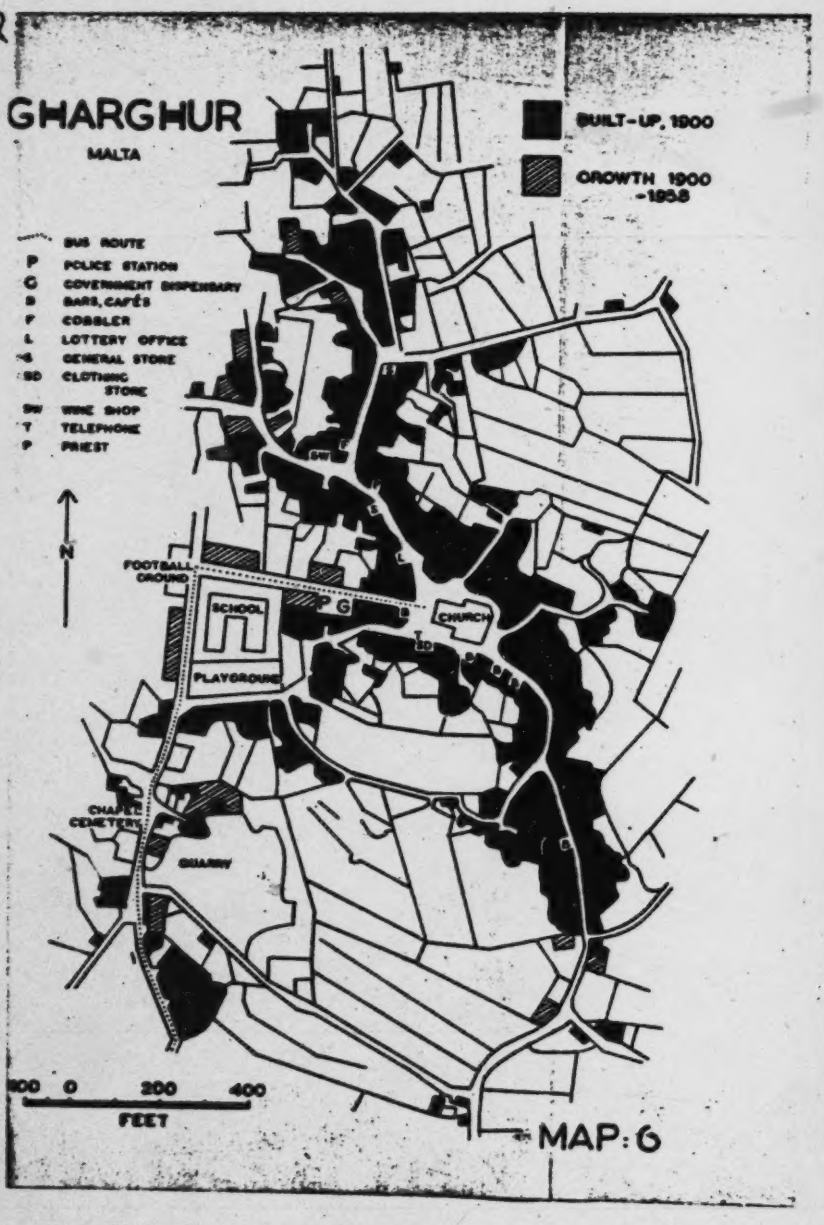
MAP: 4

[Following p. 5]



[following p. 7]

• 102
36



[following p. 11]

• 102
36

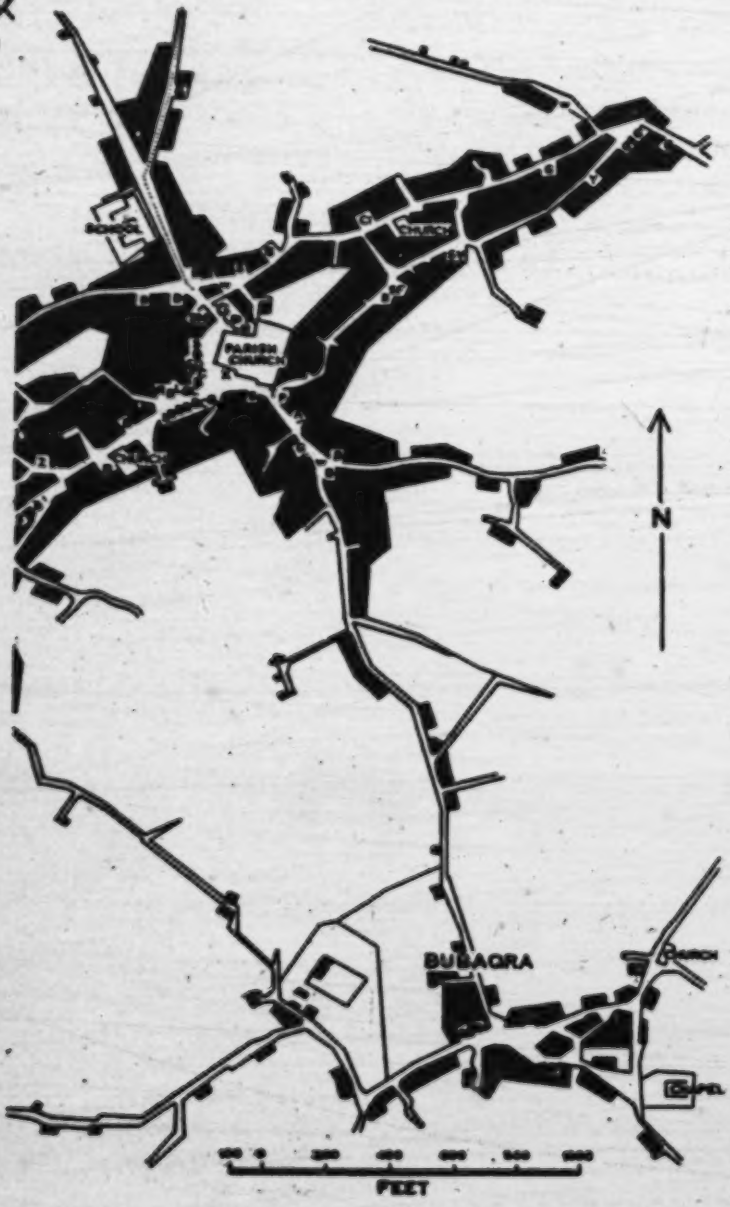
ŻURRIEQ

MALTA

MAP: 7

[following p. 13, A]

• 102
36



[following p. B, B]

G: Beeley · K-5 (1957-1958) 1959 EZ6 Malta EZ6

• 102
342
351
312
231
251
363
34

MAP: 8
FARMSTEAD
CASE VI

[following p. 102]

1 MAIN ENTRANCE ROOM
2 LIVING-ROOM/BEDROOM
3 WELL
4 WATER (TAP)
5 POULTRY
6 RABBITS
7 STEPS TO CELLAR USED FOR SHEEP
8 CARTS
9 GENERAL YARD

OTHER BUILDINGS

0 1 2 3 4 5 6 7 8 9 10
YARDS

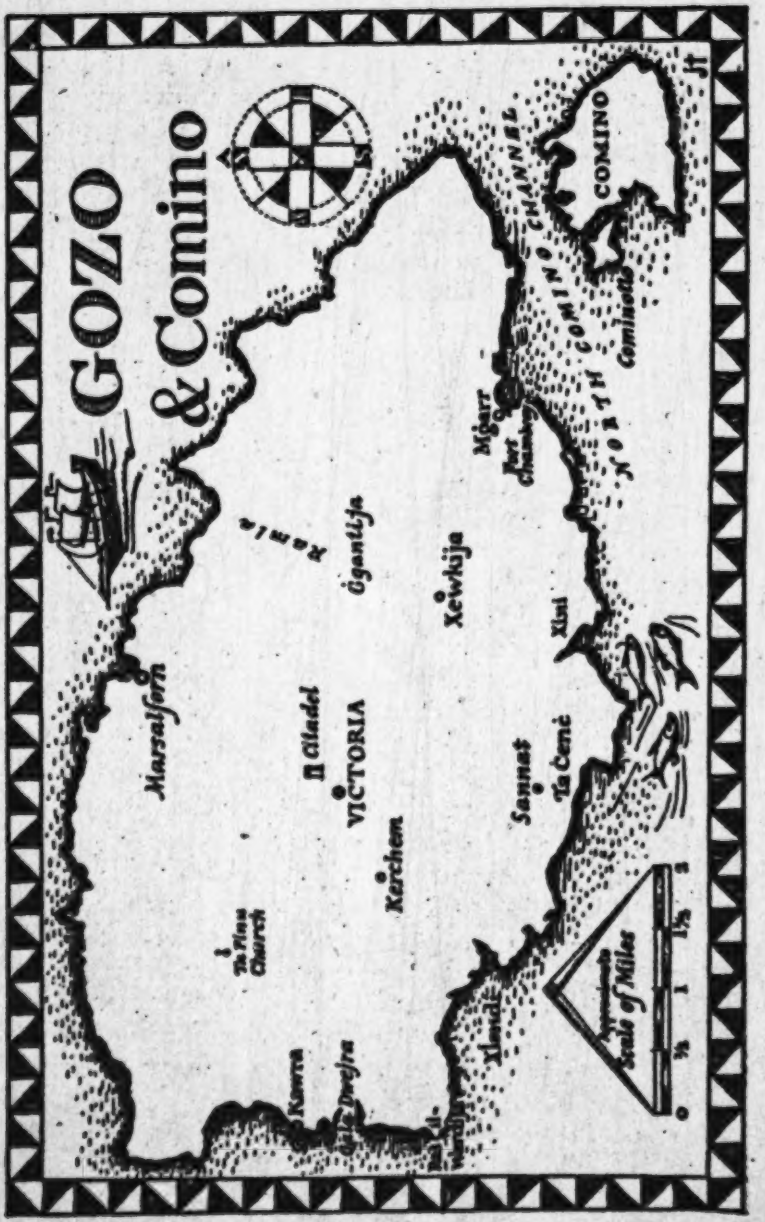
INSET - FIRST FLOOR

BEDROOM
FLAT ROOF
FLAT ROOF
FODDER STORE
STORE
STORE

WASTE GROUND, ROUGH GRAZING
STREET
STRAW
MANURE HEAP
BEANS PEAS
SCRAP HEAP
SOIL HEAP
GOAT-YARD
WASTE GROUND, ROUGH GRAZING
STREET
COW BYRE
YARD
ALLEY
GOAT SHED
YARD
HORSE
STORE
KITCHEN

9: Luke G-5 (ca. 1920-ca. 1960) 1960
EZ6 Malta EZ6
[p.10]

9: Luke G-5 (ca. 1920-ca. 1960) 1960
EZ6 Malta EZ6
GOZO
COMINO

[p. 221]

102
103